“8”

Draft Environmental Impact Report Appendices

Appendix A	Notice of Preparation and Scoping Comment Letters	Page 2
Appendix B	Initial Study	Page 238
Appendix C	Air Quality and Greenhouse Gas Technical Report	Page 283
Appendix D	Biological Resources Technical Report	Page 416
Appendix E	Historic Resource Evaluation Memorandum	Page 487
Appendix F	Fuel Use Calculations	Page 529
Appendix G	Preliminary Stormwater Control Plan	Page 533
Appendix H	Water Availability Analysis	Page 561
Appendix I	Water System Feasibility Study	Page 586
Appendix J	Wastewater System Feasibility Report	Page 592
Appendix K	Environmental Noise and Vibration Assessment	Page 662
Appendix L	Traffic Impact Study	Page 709
Appendix M	Phase 1 Environmental Site Assessment Report	Page 842

Appendix A

Notice of Preparation and Scoping Comment Letters

A Tradition of Stewardship
A Commitment to Service

Planning, Building & Environmental Services

1195 Third Street, Suite 210
Napa, CA 94559
www.countyofnapa.org

David Morrison
Director

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

Date: July 21, 2020

To: Agencies and Interested Parties

From: Napa County Planning, Building, and Environmental Services Department

Subject: **Notice of Preparation of a Draft Environmental Impact Report for the Proposed Inn at the Abbey Project (Use Permit Major Modification Application No. P19-00038-MOD)**

Review Period: July 23 to August 24, 2020

Jackson Family Investments III, LLC, is proposing a use permit major modification that, if approved, would allow construction and operation of a new 79-room boutique hotel in the Freemark Abbey Winery complex. The applicant has submitted a use permit major modification application to modify existing use permits to allow the operation of a 79-room boutique hotel on parcels zoned Commercial Limited (CL) (P19-00038-MOD). Modification of a use permit by Napa County (County) is a discretionary action subject to the California Environmental Quality Act (CEQA). The County will serve as the lead agency under CEQA and has prepared an initial study to analyze this proposed project. The attached initial study has identified the potential for significant environmental effects in certain resource areas; therefore, the County will prepare a focused environmental impact report (EIR) for the project to satisfy the requirements of CEQA (Public Resources Code [PRC] Section 21000 et seq.).

PURPOSE OF THIS NOTICE OF PREPARATION

In accordance with the California Code of Regulations (CCR) Section 15082, the County has prepared this notice of preparation (NOP) to inform agencies and interested parties that a focused EIR will be prepared for the above-referenced project. The purpose of an NOP is to provide information about the project and its potential environmental impacts sufficient to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures and alternatives that should be considered (CCR Section 15082[b]).

The project location, description, and potential environmental effects are summarized below. Additional details about the project's potential effects are included in the attached initial study.

PROJECT LOCATION

The 15-acre project site includes six parcels owned by the project applicant. The project site is located approximately one-half mile north of the City of St. Helena in unincorporated Napa County. It is located at Lodi Lane along State Route 29 (SR 29), which is known as St. Helena Highway in the project vicinity. The project includes buildings at the following addresses: 3018/3020 N. St. Helena Highway; 3010 N. St. Helena Highway; 3022 N. St. Helena Highway; 1160

Lodi Lane; 1189 Lodi Lane (also known as 3000 SR 29); and 1157, 1165, 1179, and 1191 Lodi Lane. These properties are located on Assessor's Parcel Numbers 022-130-027, 022-130-028, 022-130-023, 022-130-024, 022-220-028, and 022-220-029. Three of these parcels are zoned for Agricultural Watershed (AW), two are zoned CL, and one parcel includes both AW and CL zoning. The four parcels located north of Lodi Lane are referred to as the "North Parcel," while the two parcels south of Lodi Lane are known as the "South Parcel." The North Parcel totals 1.84 acres of land zoned CL and 8.43 acres of land zoned AW. The South Parcel includes 1.70 acres zoned CL and 4.83 acres zoned AW.

PROJECT DESCRIPTION

The applicant has submitted a use permit major modification request (P19-00038-MOD) to demolish three buildings and redevelop the site with a 79-room hotel, retail and hotel lounge space, a spa with treatment rooms, a main pool and a small plunge pool, a parking garage, a rooftop terrace, a fitness room, an outdoor lawn and gathering space, back-of-house uses, and on-site employee housing. The applicant is also seeking approval of a development agreement.

The project would involve demolition of three buildings totaling 10,048 square feet (sq. ft.). These buildings are currently used as a restaurant, retail wine shop, art gallery, and five-room motel. Demolition activities would also include removal of asphalt concrete driveways and parking areas, as well as concrete slabs.

The proposed hotel would include 79 rooms that would be split between the North Parcel (50 rooms) and the South Parcel (29 rooms). The existing Stone Building on the North Parcel is currently used for winery, retail, retail wine, and restaurant uses. Under the proposed project, there would be no physical change to the building's structure, but the interior may require minor renovations to serve as the hotel's main lobby, which will include a retail component, meeting space, and/or a bar/lounge component. Current barrel storage, wine lab, and bottle storage spaces in this building would be removed, and this space would be used for hotel conference space and back-of-house needs. The Stone Building occupies nearly 13,000 sq. ft. of floor space split between the basement and ground levels.

The project involves constructing a new North Hotel Building on the North Parcel in approximately the same location as the existing restaurant building, which would be demolished as part of this project. The North Hotel Building would occupy approximately 55,000 sq. ft. of floor area. Of this amount, approximately 21,000 sq. ft. would be used for the 50 guest rooms, and the remaining 34,000 sq. ft. would be used for the spa, retail operations, a rooftop terrace and other public areas, circulation, and back-of-house uses. An underground parking garage would be located below the North Hotel Building and would include 54 stalls for valet parking. The North Hotel Building would be a split-level structure with four levels, with a maximum building height of 45 feet.

On the South Parcel, the existing restaurant and five-room motel buildings would be demolished and replaced with a two-story South Hotel Main Building, a two-story South Hotel Barn Building, a freestanding single-story fitness studio, and two separate two-story bungalow buildings. The South Hotel Main Building would include 11 guest rooms, a support kitchen, a library, and back-of-house uses for a total of approximately 11,100 sq. ft. The South Hotel Barn Building would include 12 guestrooms totaling approximately 7,500 sq. ft. and an adjacent plunge pool. The 350-sq. ft. fitness studio would be proximate to the plunge pool. A lawn area would be located between the South Hotel Main Building and the South Hotel Barn Building. Each of the two bungalow buildings would include three rooms each for a total of approximately 4,000 sq. ft. between the two buildings. Buildings on the South Parcel would be connected by a series of walkways, breezeways, patios, courtyards, and landscaped areas. The South Parcel also includes six existing on-site residential dwelling units that would be used to house workers employed on the property.

Overall, the project would involve 10,048 sq. ft. of demolition and 78,481 sq. ft. of new construction. Current uses on the project site have 55 employees, and the project is expected to add 48 new employees for the new hotel use, for a total of 103 employees on the project site.

The City of St. Helena has provided water service to the project site since at least the 1930s. Under an agreement modification executed in March 2000, Freemark Abbey Winery receives up to 2.7 million gallons per year (mgy) or 8.3 acre-feet per year (AFY) of water from the City of St. Helena. The North Parcel uses water from two on-site groundwater wells and a connection to the City of St. Helena water system. A separate public water system serves the South Parcel.

The project would integrate the proposed hotel development on the South Parcel with the public water system on the North Parcel. The projected annual water demand, including demand for irrigation, the winery process, and domestic water, is 21.79 AFY, or 7.1 mgy. Water from the City of St. Helena for up to 2.7 mgy, or 8.3 AFY, would reduce the demand on project wells to 4.4 mgy, or 13.5 AFY. The daily average well water demand would be 12,055 gallons with a peak demand estimate (200 percent of average) of 24,110 gallons.

The North Parcel currently collects and conveys its wastewater to a Combined Wastewater Management System (CWMS). This system, known as the Markham CWMS, is located on the adjacent Markham Vineyards property and is operated under a waste discharge order approved by the San Francisco Regional Water Quality Control Board. The CWMS currently serves Markham Vineyards, Freemark Abbey, the Culinary Institute, and Wine Country Inn. The Freemark Abbey allocation under the CWMS is 4.0 mgy. Domestic wastewater from the North Parcel, which is anticipated to be 3.5 mgy, would be disposed of through the Markham CWMS.

The South Parcel's existing commercial and residential use buildings are served by on-site wastewater treatment systems. Historically, uses in the CL-zoned areas of the South Parcel have disposed of 0.93 mgy of wastewater in systems on the AW-zoned areas of the site. This legacy of shared wastewater disposal would be preserved with the new development. Wastewater from the new South Parcel hotel buildings would be disposed of through discharge to the existing underground septic system and disposal to a new on-site gray water treatment system. The existing shared septic system capacity is 0.55 mgy. This will serve an existing residence at the south end of the parcel (0.13 mgy) and be used to dispose of black water from the proposed hotel and meeting space (0.42 mgy). Gray water from the hotel would be reclaimed for landscape irrigation (0.60 mgy). A maximum of 0.51 mgy of gray water would be used for irrigation on the AW-zoned areas of the site to maintain the historic balance of 0.93 mgy of CL-zoned wastewater on AW-zoned areas of the site. The gray water treatment would meet NSF 350 requirements for gray water systems in jurisdictions with no local requirements for these systems. Treated gray water would be stored and reused through surface drip irrigation on-site.

Runoff from the project site flows via roof gutters and surface flow to on-site storm drains and natural flow lines, which ultimately discharge to the Napa River. The project would include improvements throughout the project site to install new bioretention basins, vegetated buffer strips, and self-retaining areas. Project design incorporates low-impact development design strategies, including stormwater treatment elements, minimization of impervious surfaces, and stormwater control measures. Source control best management practices (BMPs) would be designed and implemented as recommended by the California Stormwater Quality Association's BMP handbooks.

POTENTIAL APPROVALS AND PERMITS REQUIRED

Several agencies will be involved in the consideration of project elements. As the lead agency under CEQA, Napa County is responsible for considering the adequacy of the EIR and determining whether the overall project should be approved.

Permits and approvals may be required from the following agencies:

State

- Bay Area Air Quality Management District (BAAQMD): Authority to construct (for devices that emit air pollutants); permit to operate.
- California Regional Water Quality Control Board, Region 2 (San Francisco): Permits for the on-site gray water treatment system.

Local

- Napa County: Approval of a use permit major modification and various ministerial approvals, including building permits and grading permits. The applicant is also seeking approval of a development agreement.

POTENTIAL ENVIRONMENTAL IMPACTS

Pursuant to CEQA and CCR Section 15064, the discussion of potential effects on the environment in the EIR shall be focused on those impacts that the County has determined may be potentially significant. The EIR also will evaluate the cumulative impacts of the project when considered in conjunction with other related past, current, and reasonably foreseeable future projects. The County has determined that the project could result in potential environmental impacts in the following topic areas, which will be further evaluated in the EIR:

- **Aesthetics:** The project involves removing existing buildings and constructing a new hotel complex on a site surrounded by vineyards and residences. The EIR will evaluate whether the project would result in significant impacts related to scenic vistas, scenic resources, and visual character. Because the project would include new nighttime lighting, the EIR will evaluate the impacts of the new nighttime light sources.
- **Agricultural Resources:** The project site is zoned CL and AW and has been used for commercial and agricultural operations. Although the project proposes development of a new hotel on the CL-zoned lands, the AW-zoned areas would be affected by development of project infrastructure and parking. The EIR analysis will focus on the impact of any loss of agricultural lands and associated General Plan and County requirements associated with the protection of agricultural resources.
- **Air Quality/Greenhouse Gas Emissions:** The project site is located in Napa County, which is under the local air quality jurisdiction of BAAQMD. The analysis of criteria air pollutant and greenhouse gas emissions and impacts will be conducted in accordance with BAAQMD's current methods. The analysis will quantify indirect emissions associated with energy consumption, which also includes the energy associated with water consumption.
- **Biological Resources:** The project site is currently developed with hardscape and vacant buildings and is adjacent to a winery and vineyard. Therefore, impacts on biological resources are expected to be minor. Nonetheless, the EIR will evaluate the project's impacts on sensitive biological resources using existing documentation pertinent to the biological resources in the project vicinity and a reconnaissance survey of the site to identify any sensitive biological resources potentially on-site.
- **Cultural and Tribal Cultural Resources:** The project site includes structures that, given their age, require evaluation to determine whether they could be described as historic resources. The EIR will include an evaluation of the potential for historic resources to be present on the project site and will identify mitigation if necessary to reduce impacts. On March 19, 2020, Napa County extended invitations to consult to Middletown Rancheria, Mishewal Wappo, and Yocha Dehe Wintun Nation. Middletown Rancheria has requested consultation on the project and has been in contact with County staff. The Yocha Dehe Wintun Nation responded to the letter, informing the County that the project was not within the aboriginal territories and the tribe declined to comment on the project. The letter to the Mishewal Wappo was returned to the County, and County staff is attempting to resend the letter to the tribe. Because consultation under AB 52 has been initiated and is ongoing, the EIR will include a discussion of potential impacts on these resources.
- **Energy**: This section will evaluate whether implementing the project would result in a significant environmental effect from the wasteful, inefficient, or unnecessary consumption of energy during project construction or operation.
- **Hydrology and Water Quality**: The project would increase the extent of impervious surfaces on the project site. This analysis will evaluate the project's potential to result in localized flooding and any potential water quality impacts resulting from construction and operation of the project.
- **Land Use and Planning**: This section will evaluate whether the project has the potential to divide an established community or would conflict with plans, policies, zoning, and County Code requirements that protect the environment.
- **Noise:** Implementing the project would result in temporary construction noise and operational noise related to cars, delivery trucks, and events. The EIR will provide an analysis to determine whether traffic or events would expose nearby residences to short-term noise levels that exceed the exterior noise limits established in Napa County Code Chapter 8.16. The EIR will identify feasible mitigation to reduce noise exposure levels (e.g., time-of-day limitations) where necessary.

- **Population and Housing**: The EIR will evaluate the project's potential to induce population growth or require the construction of replacement housing for displaced residents.
- **Public Services/Utilities:** The project would require public services and utilities, such as police and fire protection, water, solid waste, electricity, and natural gas. The project also includes a system for the on-site treatment and reuse of gray water. The EIR will identify the required services and analyze the potential environmental impacts of providing these services.
- **Transportation:** The project would generate vehicle trips related to both construction and operation. The EIR will evaluate both construction- and operation-related traffic impacts as required by the Napa County General Plan, although traffic level of service is no longer considered an environmental effect for purposes of CEQA. A traffic impact study has been prepared for the project and will be used to inform the analysis of project impacts related to vehicle miles traveled.
- **Wildfire:** Although the project site is not within a State Responsibility Area or on lands classified as Very High Fire Hazard Severity Zones, potential effects related to wildfire will be evaluated in the EIR.

These issue areas will be discussed further in the EIR, and, where possible, feasible mitigation measures will be recommended to reduce any identified potentially significant and significant impacts.

Pursuant to CEQA, the discussion of potential effects on the physical environment is focused on those impacts that may be significant or potentially significant. CEQA allows a lead agency to limit the detail of discussion of the environmental effects that are not considered potentially significant (PRC Section 21100, CCR Sections 15126.2[a] and 15128). CEQA requires that the discussion of any significant effect on the environment be limited to substantial, or potentially substantial, adverse changes in physical conditions that exist in the affected area, as defined in PRC Section 21060.5 (statutory definition of "environment"). Effects dismissed in the attached initial study as clearly less than significant and unlikely to occur need not be discussed further in the EIR unless the lead agency subsequently receives information inconsistent with the finding in the initial study (CCR Section 15143). Environmental issue areas scoped out of the focused EIR will include an explanation of why these issues would not result in significant environmental effects and are not required to be evaluated further. Environmental issue areas that would be scoped out of the focused EIR are listed below. See the attached initial study for supporting evidence.

- Forestry Resources
- Geology/Soils
- Hazards and Hazardous Materials
- Mineral Resources
- Recreation

ALTERNATIVES TO BE EVALUATED IN THE EIR

In accordance with the State CEQA Guidelines (CCR Section 15126.6), the EIR will describe a range of reasonable alternatives to the project that are capable of meeting most of the project's objectives and that would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will provide an analysis of the No-Project Alternative and will identify the environmentally superior alternative.

DOCUMENTS AVAILABLE FOR PUBLIC REVIEW

The NOP and initial study are available for public review at the following locations:

Napa County Planning, Building, and Environmental Services Department
1195 Third Street, Suite 210
Napa, CA

Napa Main Library
580 Coombs Street
Napa, CA

St. Helena Library
1492 Library Lane
St. Helena, CA

The NOP and initial study are also available for public review online at https://www.countyofnapa.org/2876/Current-Projects-Explorer. Project materials can be viewed online at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

PROVIDING COMMENTS

Agencies and interested parties may provide the County with written comments on topics to be addressed in the EIR for the project. Because of time limits mandated by state law, comments should be provided no later than 5:00 p.m. on **August 24, 2020**. Please send all comments to:

Napa County Planning, Building, and Environmental Services Department
Attention: Trevor Hawkes
1195 Third Street, Suite 210
Napa, CA 94559
Telephone: (707) 253-4388
Fax: (707) 299-4320
Email: Trevor.Hawkes@countyofnapa.org

Agencies that will need to use the EIR when considering permits or other approvals for the project should provide the name, phone number, and email address of the appropriate contact person at the agency. Comments provided by email should include "Inn at the Abbey Project NOP Scoping Comment" in the subject line, as well as the name and physical address of the commenter in the body of the email.

All comments on environmental issues received during the public comment period will be considered and addressed in the draft EIR, which is anticipated to be available for public review in early 2021.

PUBLIC SCOPING MEETING

The Napa County Planning Commission will hold a public scoping meeting to inform interested parties about the proposed project and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. The meeting time and location are as follows:

Wednesday, August 5, 2020, at 9:00 a.m.
Napa County Administration Building
Third Floor Board Chamber
1195 Third Street
Napa, CA 94559

This meeting will be conducted via teleconference using the Microsoft Zoom program in order to minimize the spread of the COVID-19 virus, in accordance with the State of Emergency proclaimed by Governor Newsom on March 4, 2020, Executive Order N-29-20 issued by Governor Newsom on March 17, 2020, and the Shelter in Place Order issued by the Napa County Health Officer on March 18, 2020, as may be periodically amended. To participate in the public scoping meeting, the public are invited to observe and address the Commission telephonically or electronically. Instructions for public participation will be included in the agenda for the meeting, which will be available one week prior to the meeting date:

The meeting space is accessible to persons with disabilities. Individuals needing special assistive devices will be accommodated to the County's best ability. Assistive listening devices are available for the hearing impaired from the Clerk of the Board; please call (707) 253-4580 for assistance. If an American Sign Language interpreter or any other special arrangement is required, please provide the Clerk of the Board with 48-hour notice by calling (707) 253-4417.

From: LC
To: Hawkes, Trevor
Subject: Abbey Hotel
Date: Saturday, August 8, 2020 8:19:43 AM

[External Email - Use Caution]

Good morning,

In a time of extreme inequality, when workers struggle for housing and families scramble to figure out at-home learning and our community faces budget shortfalls because of lack of revenue from hotel occupancy due to a global pandemic, it's irresponsible (and horrible optics) to green light another luxury hotel.

Our economy needs diversification, our valley doesn't need another high end hotel. Thank you.

-LC Arisman
Napa, CA

Sent from my iPhone

From:	JW
To:	Hawkes, Trevor
Subject:	Inn at the Abbey EIR Scope
Date:	Monday, August 24, 2020 10:14:02 PM

[External Email - Use Caution]

Dear Trevor:

The proposed Inn at the Abbey project on Hwy 29 and Lodi Lane seems to necessitate, and we as neighbors hereby request, the following studies, by impartial 3rd party consultants of course, for the EIR:

Traffic, including vehicular safety, and other vehicular impacts (air pollution, noise pollution, road, etc.)

Pedestrian, including but not limited to pedestrian Safety

Environmental - including but not limited to: air quality, acoustic/noise, water, light pollution.

Water usage, resources.

Civil engineering - including but not limited to drainage, flooding,

Aesthetics including but not limited to massing, scale, and site placement.

Thank you.

Sincerely,

John & Gretchen Berggruen
Jennifer Weiss
(Lodi Lane, St. Helena)

From: Roman, Isabella@DTSC
To: Hawkes, Trevor
Subject: Inn at the Abbey NOP/IS Comment
Date: Friday, August 21, 2020 4:43:00 PM

[External Email - Use Caution]

Hello,

I represent the Department of Toxic Substances Control reviewing the Notice of Preparation and Initial Study Checklist for the Inn at the Abbey project.

The Initial Study Checklist text doesn't have much of a discussion about past land uses. The text does say that the site has "been used for a blend of agricultural and commercial uses since the 1960s." There is no discussion about how these past land uses may affect hazards and hazardous materials. Past land uses could have resulted in hazardous materials releases within the project area that should be investigated prior to the proposed development for public health protection. Past land uses could indicate the need for conducting a Phase 1 Environmental Site Assessment (ESA), Phase 2 ESA or other environmental sampling activities. Additional information from these investigations would help to eliminate potential risk to future workers and customers.

Please feel free to reach out if you have any questions or concerns.

Sincerely,

Isabella Roman
Environmental Scientist
Site Mitigation and Restoration Program
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710

From:	ruralangwin
To:	Hawkes, Trevor
Subject:	Inn at The Abbey Scoping comments
Date:	Wednesday, August 5, 2020 2:18:16 PM

[External Email - Use Caution]

---------- Forwarded message ----------
From: **ruralangwin** <kelliegato@gmail.com>
Date: Wednesday, August 5, 2020
Subject: a Comments In at Athens Abbey
To: "Dameron, Megan" <megan.dameron@countyofnapa.org>, anne.cottrell@lucene.com, Andrew Mazotti <andrewmazotti@gmail.com>, Joell gallagher <joellegPC@gmail.com>, Dave.Whitmer@countyofnapa.org
Cc: "Valdez, Jose (Louie)" <Jose.Valdez@countyofnapa.org>, Diane Dillon <diane@dianedillon.net>, Ryan Gregory <ryan.gregory@countyofnapa.org>, "Ramos, Belia" <belia.ramos@countyofnapa.org>, brad.wagenknecht@countyofnapa.org

Good Morning Commissioners,

Please accept my comments for the Scoping Meeting for the DEIR for the Inn at the Abbey. I am quite familiar with all subject parcels and managed the irrigation/sump system for down stream properties.

1. Applicant should address the loss of small rental units that currently are owned by Jackson Family fronting on Lodi Lane. Are these existing units shown on all plans or are they being ignored? Are the plans before you piecemealing? Is the whole of the project being presented? How many units would be lost for rental housing in the St Helena area with the demolition of the Lodi Lane units? Where would these units be replaced on site? Is the applicant kicking this can down the road? How many workers will be added from project development? What is the proposed pay rate? Where are these additions workers anticipated to live and what is their added cumulative impact to traffic. To housing shortages?

2. This project must address cumulative impacts from all know or reasonably anticipated projects.

Please have applicant address cumulative impacts from : Four Seasons Calistoga, Veranda Hotel Calistoga, Enchanted Hills Calistoga, additional hotel Rooms Doctor Wilkinson's & Calistoga Motor Lodge.

What addition development or uses are proposed at at the Caridean Complex on Hwy 29?

Address the traffic impacts from the massive Lotus Land Project a Guenoc Ranch just north of Napa County Line in Butts Canyon.

Evaluate traffic and climate change impacts from the massive and yet undefined developments at Lake Berryessa resorts under Napa County Management.

Consider the cumulative impacts of Hall Long meadow Hotel in St. Helena, Katherine Hall Hotel In St Helena, possible Hotel Development in City of St. Helena property.

Hotel approved at Red Hell Site north of Napa .

Is there and economic analysis? Is there a risk benefit analysis?

3. Please address the traffic safety impacts to south bound Hwy 29 travelers. Limited site distance exists to south bound drivers and highway speeds are quite high. How will south bound drivers turning east into project site be protected from being hit from rear by oncoming southbound drivers with limited visibility?

How will the increased traffic, operations, deliveries etc. effect the residents of the low income Buckhorn Mobile Home Park across from project site? How will pedestrians, bikers and users of the VINE bus stop be effected by increased traffic? How will this effect air quality and community health for this small affordable community? What about environmental justice for residents of the Buckhorn?

4. Staff must investigate to legality of additional waste being piped off one parcel and onto another for treatment. This topic was evaluated in a past 'Historic Commercial' parcel review and could to not be permitted. While some apparent agreement has been put forth where by some waste is treated in the sewage ponds near Markham, staff, not the applicant must determine the legality of transporting sewage waste across AP designated lands. In my recollection this was a Measure J/P trigger as it increased commercial use of AP designated lands. The complexity of what is being proposed must be fully day-lighted and fully understood by Planning Commission. I believe that the existing waste water treatment ponds are ultimately released into or sprayed near the Napa River.

5. Waste leach lines proposed behind the current Dozen Vintners building is untenable. The south East corner of Lodi Lane all the way south to Deer Park Rd. is an obvious flood zone! Planning Commission use cautions here! The flood maps you are being shown are not accurate or have been cherry picked! Your staff person may be too unfamiliar with ground truth situation to understand the severity, frequency and duration of flooding here. Note the riparian vegetation at this site was recently cleared yet the levees are still visible on the property. Residents on Lodi Lane, York Lane and the down stream Revana Winery and the Jackson Family parcels are subject to weeks of inundation by flood waters making this location for a commercial septic leach line system unrealistic. Vineyards in these areas employ huge sump pumps in an attempt to remove standing flood waters from vines. Where are the proposed reserve areas for these leach fields should they fail due to flooding and soil saturation? How would failed leach system impact the health of the Napa River? This is historic flood plain from the Napa River where vines have been planted but ducks still dabble in the Standing flood waters. DONT BE FOOLED! This is a wetland not an appropriate location for a commercial septic leach field for a hotel, and spa!

Thank you for the opportunity to include my comments in the scoping session.

Sincerely,

Kellie Anderson

Angwin

From: Dolce Bella
To: Hawkes, Trevor
Subject: Inn
Date: Thursday, August 6, 2020 4:08:40 PM

[External Email - Use Caution]

I read the article in the Register , and from what I could discern, this does not strike me as anything “special “ or out of the ordinary. Does the valley really need another hotel, inn, or tasting room??

Sent from my iPad

From: Antonia Allegra <antonia.allegra@gmail.com>
Sent: Tuesday, August 4, 2020 6:04 PM
To: PC <PC@countyofnapa.org>
Cc: Hawkes, Trevor <trevor.hawkes@countyofnapa.org>
Subject: Aug. 5 Public Scoping Meeting, 9 a.m. Re: #8A - Inn at the Abbey

[External Email - Use Caution]

8-4-2020
TO: Trevor Hawkes and members of the Napa County Planning, Building and Environmental Services

Based on the County of Napa basics request re the Aug. 5, 9 am Public Scoping Meeting, #8A, I send you a comment on behalf of the 12 families that reside on Byrd Hill Road, on the western hill opposite Freemark Abbey/the proposed Inn at the Abbey.

Some of us will attend the meeting tomorrow morning, mostly to listen and learn. However, what we plan to do is to send a letter to our contact, Trevor Hawkes, with our thoughts and comments. The letter will arrive well before August 24, the cut-off date for such submission.

Thank you for including us in this public scoping meeting as well as any future meetings regarding planning, building and environmental services regarding the Inn at the Abbey.

Best,
Antonia Allegra
antonia.allegra@gmail.com
707-244-5029

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

August 11, 2020

Mr. Trevor Hawkes
County of Napa
1195 Third Street, Suite 210
Napa, CA 94559
trevor.hawkes@countyofnapa.org

Subject: Inn at the Abbey, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2020079021, City of St. Helena, Napa County

Dear Mr. Hawkes:

California Department of Fish and Wildlife (CDFW) personnel have reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the Inn at the Abbey (Project) located at the intersection of Lodi Lane and St. Helena Highway North, in the City of St. Helena, Napa County.

CDFW is commenting on the NOP as a Trustee Agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 15386). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources.

CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT DESCRIPTION

The Project includes the demolition of three buildings totaling approximately 10,048 square feet and includes the construction of a 79-room hotel and associated buildings, totaling approximately 78,481 square feet.

The CEQA Guidelines (§§15124 and 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description:

- Encroachments into riparian areas, wetlands, or other sensitive areas.

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

- A description of any tree removal, including the number, approximate diameter at breast height (size), and species of all trees that will be removed.

- Plans for any proposed buildings, structures, ground disturbing activities, fencing, paving, landscaping, and stormwater systems.

- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand the Project's potentially significant impacts on the environment (CEQA Guidelines, §§ 15125, 15360). CDFW recommends that the draft EIR provide baseline habitat assessments for any special-status plant and wildlife species known to occur in the vicinity of the Project area, including all rare, threatened, or endangered species (CEQA Guidelines, § 15380). Fully protected, threatened, endangered, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

- white-tailed kite (*Elanus leucurus*), a fully protected species under Fish and Game Code section 3511;
- pallid bat (*Antrozous pallidus*), a California (State) Species of Special Concern (SSC);
- Greene's narrow-leaved daisy (*Erigeron greenei*), California Rare Plant Rank 1B.2, protected under CEQA (Pub. Resources Code, § 15380);
- Jepson's leptosiphon (*Leptosiphon jepsonii*), California Rare Plant Rank 1B.2, protected under CEQA (Pub. Resources Code, § 15380);
- narrow-anthered brodiaea (*Brodiaea leptandra*), California Rare Plant Rank 1B.2, protected under CEQA (Pub. Resources Code, § 15380);
- Rincon Ridge ceanothus (*Ceanothus confusus*), California Rare Plant Rank 1B.1, protected under CEQA (Pub. Resources Code, § 15380);
- Calistoga ceanothus (*Ceanothus divergens*), California Rare Plant Rank 1B.2, protected under CEQA (Pub. Resources Code, § 15380);
- Napa false indigo (*Amorpha californica var. napensis*), California Rare Plant Rank 1B.2, protected under CEQA (Pub. Resources Code, § 15380).

Habitat descriptions and species profiles should include information from multiple sources, such as aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such as California Natural Diversity Database. Based on the data and information from the habitat assessment, the draft EIR can then adequately assess which special-status species are likely to occur in the Project vicinity.

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://wildlife.ca.gov/Conservation/Survey-Protocols.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (http://www.cnps.org/cnps/rareplants/inventory/), must be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and require the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants.

IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate that the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Potential for take[1] of special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g. snags, roosts);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, or human presence; and

The CEQA document also should identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact – e.g., reduction of available habitat for a listed species – should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines (§§ 15021, 15063, 15071, 15126.2, 15126.4 and 15370) direct the lead agency to consider and describe all feasible mitigation measures

[1] Fish and Game Code section 86: "Take" is defined as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

to avoid potentially significant impacts in the draft EIR, and/or mitigate significant impacts of the project on the environment. This includes a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the U.S. Fish and Wildlife Service and CDFW, as applicable. These measures can then be incorporated as enforceable project conditions to reduce potential impacts to biological resources to less-than-significant levels.

Pallid Bat

Trees and existing buildings and structures on the Project site may potentially support roosting bats. Fish and Game Code section 4150 prohibits take of all bats, regardless of their status. The CEQA Guidelines section 15380 also affords protection to threatened, endangered, rare, and special-status species. The Project site could provide habitat for the pallid bat, a California Species of Special Concern. Pallid bats use natural roosts, such as tree hollows, caves, rock crevices, and overhangs (Hermanson and O'Shea, 1983); and have also been observed using roosts on the exterior of buildings in Napa, Sonoma, Marin, and Mendocino County (Tatarian 1999). CDFW recommends that a qualified bat biologist perform a bat habitat assessment of all buildings and trees proposed for removal, at least 30 days prior to Project implementation, to determine if any of the trees or buildings contain suitable bat roosting habitat or show evidence thereof. Trees containing suitable bat roosting habitat (e.g. cavities, crevices, deep bark fissures) should be removed only during seasonal periods of bat activity (i.e. prior to the maternity season from approximately March 1 (or when night temperatures are above 45°F and when rains have ceased) through April 15 (when females begin to give birth to young); and prior to winter torpor from September 1 (when young bats are self-sufficiently volant) until October 15 (before night temperatures fall below 45°F and rains begin). Bat habitat trees should be removed using a two-day phased approach during the seasonal periods outlined above. On day one, under the supervision of a qualified bat biologist, all limbs that do not contain suitable bat roosting habitat shall be removed with chainsaws only. The next day, the rest of the tree should be removed. A qualified bat biologist should also perform a bat habitat assessment of all buildings proposed for removal. If the qualified bat biologist determines that bats are roosting within or around exterior of buildings, then a Project-specific avoidance and minimization plan should be prepared for CDFW review and approval prior to the start of Project activities.

Fully Protected Species

Fully protected species such as white-tailed kite may not be taken or possessed at any time (Fish and Game Code § 3511). Therefore, CDFW recommends that the draft EIR include measures to ensure complete take avoidance of these fully protected species, such as conducting construction activities outside of the nesting bird season (i.e. typically February 1 through August 31), having a qualified biologist conduct pre-

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

construction nesting bird surveys, and having a qualified biologist determine appropriate no-disturbance buffers from construction activities from each active nest (if found).

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (CEQA §§ 21001(c), 21083, and CEQA Guidelines §§ 15380, 15064, 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code § 2080.

Lake and Streambed Alteration Agreement

CDFW will require an LSA Agreement, pursuant to Fish and Game Code §§ 1600 et. seq. for Project-related activities within any 1600-jurisdictional waters within the proposed Project area. Notification is required for any activity that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW, as a Responsible Agency under CEQA, will consider the CEQA document for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA (Public Resources Code § 21000 et seq.) as the responsible agency.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

DocuSign Envelope ID: C3966E6A-4741-4DB5-BDEC-451B3662113F

If you have any questions, please contact Mr. Garrett Allen, Environmental Scientist, at garrett.allen@wildlife.ca.gov; or Ms. Karen Weiss, Senior Environmental Scientist (Supervisory), at karen.weiss@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

Gregg Erickson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

REFERENCES CITED

Hermanson, J. W. and T. J. O'Shea. 1983. *Antrozous pallidus*. Mammalian Species, 213: 1-8.

Tatarian, Greg. 1999. Use of Buildings and Tolerance of Disturbance by Pallid Bats *Antrozous pallidus*. Bat Research News: Volume 40, Number 1, Spring 1999.

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

August 20, 2020

SCH # 202007921
GTS # 04-NAP-2019-00204
GTS ID: 14811
Co/Rt/Pm: NAP-29-30.628~30.777

Trevor Hawkes, Planner III
County of Napa
1195 Third Street, Suite 210
Napa, CA 94559

Inn at the Abbey – Notice of Preparation (NOP)

Dear Trevor Hawkes:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Inn at the Abbey. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the July 2020 NOP.

Project Understanding

The proposed project would demolish three structures (a restaurant, a commercial building, and a 5-room motel) and redevelop the site with a 79-room hotel, retail, and hotel lounge space, a spa with treatment rooms, a main pool and a small plunge pool, a parking garage, a rooftop terrace, a fitness room, an outdoor lawn and gathering space, back-of-house uses, and on-site employee housing. Overall, the project would involve 10,048 square feet (s.f.) of demolition and 78,481 s.f. of new construction. Current uses on the project site have 55 employees and the project is expected to add 48 new employees for the new hotel use, for a total of 103 employees.

The 15-acre project site is located approximately one-half mile north of the City of St. Helena in unincorporated Napa County, immediately adjacent to State Route (SR)-29.

Highway Operations

Caltrans agrees with the recommendation in the Traffic Impact Study that Driveway 2 should be a Right-In, Right-Out driveway. However, please explain why this restriction does not apply to Driveway 1 in the report.

Additionally, ensure that all driveways on State routes must be constructed in accordance with Caltrans standards. Early coordination with Caltrans is strongly recommended for any mitigations to modify and/or restripe the intersection of SR-29/Lodi Lane.

Landscape Architecture
Landscaping around Lodi Lane shall adhere to Caltrans Highway Design Manual (HDM) standards for sight distance. Please refer to https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm for more information.

Additionally, this project is located within an eligible State Scenic Highway. The development as mentioned in the NOP may affect the eligibility of this designation.

Travel Demand Analysis
Please note that a travel demand analysis that provides a Vehicle Miles Traveled (VMT) analysis will be required as part of the California Environmental Quality Act (CEQA) process.) With the enactment of Senate Bill (SB) 743, Caltrans is focusing on transportation infrastructure that supports smart growth and efficient development to ensure alignment with State policies using efficient development patterns, innovative travel demand reduction strategies, multimodal improvements, and VMT as the primary transportation impact metric. The travel demand analysis should include:

- A vicinity map, regional location map, and site plan clearly showing project access in relation to the State Transportation Network (STN). Ingress and egress for all project components should be clearly identified. Clearly identify the State right-of-way (ROW). Project driveways, local roads and intersections, car/bike parking, and transit facilities should be mapped.
- A VMT analysis pursuant to the Office of Planning and Research's Guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.
- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.
- Clarification of the intensity of events/receptions to be held at the location and how the associated travel demand and VMT will be mitigated.

Vehicle Trip Reduction

Based on the Initial Study, the project is expected to have potentially significant VMT impacts due to the additional worker and commute trips and guest trips to and from the project site. To mitigate the potentially significant VMT, the project should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions. Such measures are critical to facilitating efficient site access. The measures listed below can promote smart mobility and reduce regional VMT.

- Project design to encourage walking, bicycling and transit access;
- Transit subsidies on an ongoing basis;
- Ten percent vehicle parking reductions;
- Charging stations and designated parking spaces for electric vehicles;
- Carpool and clean-fuel parking spaces;
- Designated parking spaces for a car share program;
- Unbundled parking;
- Showers, changing rooms and clothing lockers for employees that commute via active transportation;
- Emergency Ride Home program;
- Employee transportation coordination;
- Secured bicycle storage facilities;
- Fix-it bicycle repair station(s);
- Bicycle route mapping resources;
- Participation/Formation in/of a Transportation Management Association (TMA) in partnership with other developments in the area; and
- Aggressive trip reduction targets with Lead Agency monitoring and enforcement.

TDM programs should be documented with annual monitoring reports by a TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets. For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). The reference is

available online at:
http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.

Multimodal Planning

The project's primary and secondary effects on pedestrians, bicyclists, travelers with disabilities, and transit users should be evaluated in the DEIR, including countermeasures and trade-offs resulting from mitigating VMT increases. Access for pedestrians and bicyclists to transit facilities must be maintained.

Although there may not be changes to existing roads, the potential significant amount of vehicular trips adjacent to a major bike and pedestrian route (The Napa Vine Trail) would result in conflicts between motorized vehicles and pedestrian and bicyclists, which will also require mitigation.

Please note that the Napa Valley Trail Project runs adjacent to this project frontage on SR-29 and therefore, these projects will need to be coordinated during construction and as part of the final design phase. Please contact Caltrans Project Manager for Napa County, Ahmad Rahimi at ahmad.rahimi@dot.ca.gov for project coordination.

Lead Agency

As the Lead Agency, the County of Napa is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Caltrans recommends that the Lead Agency consider a fair share contribution to the Napa Valley Vine Trail: St. Helena to Calistoga section.

Encroachment Permit

Please be advised that any permanent work or temporary traffic control that encroaches onto the ROW requires a Caltrans-issued encroachment permit. If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application, six (6) sets of plans clearly delineating the State ROW, six (6) copies of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved

encroachment exception request, and/or airspace lease agreement.

To download the permit application and to obtain more information on all required documentation, visit https://dot.ca.gov/programs/traffic-operations/ep/applications.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Yunsheng Luo at Yunsheng.Luo@dot.ca.gov. Additionally, for future notifications and requests for review of new projects, please contact LDIGR-D4@dot.ca.gov.

Sincerely,

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review

cc: State Clearinghouse

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

August 26, 2020

SCH # 202007921
GTS # 04-NAP-2019-00204
GTS ID: 14811
Co/Rt/Pm: NAP-29-30.628~30.777

Trevor Hawkes, Planner III
County of Napa
1195 Third Street, Suite 210
Napa, CA 94559

Inn at the Abbey – Notice of Preparation (NOP)

Dear Trevor Hawkes:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Inn at the Abbey. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the July 2020 NOP.

Project Understanding

The proposed project would demolish three structures (a restaurant, a commercial building, and a 5-room motel) and redevelop the site with a 79-room hotel, retail, and hotel lounge space, a spa with treatment rooms, a main pool and a small plunge pool, a parking garage, a rooftop terrace, a fitness room, an outdoor lawn and gathering space, back-of-house uses, and on-site employee housing. Overall, the project would involve 10,048 square feet (s.f.) of demolition and 78,481 s.f. of new construction. Current uses on the project site have 55 employees and the project is expected to add 48 new employees for the new hotel use, for a total of 103 employees.

The 15-acre project site is located approximately one-half mile north of the City of St. Helena in unincorporated Napa County, immediately adjacent to State Route (SR)-29.

Highway Operations

Caltrans agrees with the recommendation in the Traffic Impact Study that Driveway 2 should be a Right-In, Right-Out driveway. However, please explain why this restriction does not apply to Driveway 1 in the report.

Additionally, ensure that all driveways on State routes must be constructed in accordance with Caltrans standards. Early coordination with Caltrans is strongly recommended for any mitigations to modify and/or restripe the intersection of SR-29/Lodi Lane.

Landscape Architecture
Landscaping around Lodi Lane shall adhere to Caltrans Highway Design Manual (HDM) standards for sight distance. Please refer to https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm for more information.

Additionally, this project is located within an eligible State Scenic Highway. The development as mentioned in the NOP may affect the eligibility of this designation.

Hydraulics
Any increase in runoff due to the project that drains towards the State Right-of-Way (ROW) should be metered to pre-construction levels. Of note would be the construction of impervious surfaces used for the new parking garage and hotel facilities. If any runoff drains from the proposed project to the State ROW, an analysis for pre- and post-construction is required.

Travel Demand Analysis
Please note that a travel demand analysis that provides a Vehicle Miles Traveled (VMT) analysis will be required as part of the California Environmental Quality Act (CEQA) process.) With the enactment of Senate Bill (SB) 743, Caltrans is focusing on transportation infrastructure that supports smart growth and efficient development to ensure alignment with State policies using efficient development patterns, innovative travel demand reduction strategies, multimodal improvements, and VMT as the primary transportation impact metric. The travel demand analysis should include:

- A vicinity map, regional location map, and site plan clearly showing project access in relation to the State Transportation Network (STN). Ingress and egress for all project components should be clearly identified. Clearly identify the State ROW. Project driveways, local roads and intersections, car/bike parking, and transit facilities should be mapped.
- A VMT analysis pursuant to the Office of Planning and Research's Guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes.

Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.
- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.
- Clarification of the intensity of events/receptions to be held at the location and how the associated travel demand and VMT will be mitigated.

Vehicle Trip Reduction

Based on the Initial Study, the project is expected to have potentially significant VMT impacts due to the additional worker and commute trips and guest trips to and from the project site. To mitigate the potentially significant VMT, the project should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions. Such measures are critical to facilitating efficient site access. The measures listed below can promote smart mobility and reduce regional VMT.

- Project design to encourage walking, bicycling and transit access;
- Transit subsidies on an ongoing basis;
- Ten percent vehicle parking reductions;
- Charging stations and designated parking spaces for electric vehicles;
- Carpool and clean-fuel parking spaces;
- Designated parking spaces for a car share program;
- Unbundled parking;
- Showers, changing rooms and clothing lockers for employees that commute via active transportation;
- Emergency Ride Home program;
- Employee transportation coordination;
- Secured bicycle storage facilities;
- Fix-it bicycle repair station(s);
- Bicycle route mapping resources;
- Participation/Formation in/of a Transportation Management Association (TMA) in partnership with other developments in the area; and
- Aggressive trip reduction targets with Lead Agency monitoring and enforcement.

TDM programs should be documented with annual monitoring reports by a TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets. For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). The reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.

Multimodal Planning

The project's primary and secondary effects on pedestrians, bicyclists, travelers with disabilities, and transit users should be evaluated in the DEIR, including countermeasures and trade-offs resulting from mitigating VMT increases. Access for pedestrians and bicyclists to transit facilities must be maintained.

Although there may not be changes to existing roads, the potential significant amount of vehicular trips adjacent to a major bike and pedestrian route (The Napa Vine Trail) would result in conflicts between motorized vehicles and pedestrian and bicyclists, which will also require mitigation.

Please note that the Napa Valley Trail Project runs adjacent to this project frontage on SR-29 and therefore, these projects will need to be coordinated during construction and as part of the final design phase. Please contact Caltrans Project Manager for Napa County, Ahmad Rahimi at ahmad.rahimi@dot.ca.gov for project coordination.

Lead Agency

As the Lead Agency, the County of Napa is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Caltrans recommends that the Lead Agency consider a fair share contribution to the Napa Valley Vine Trail: St. Helena to Calistoga section.

Encroachment Permit

Please be advised that any permanent work or temporary traffic control that encroaches onto the ROW requires a Caltrans-issued encroachment permit. If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As part of

the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application, six (6) sets of plans clearly delineating the State ROW, six (6) copies of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement.

To download the permit application and to obtain more information on all required documentation, visit https://dot.ca.gov/programs/traffic-operations/ep/applications.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Yunsheng Luo at Yunsheng.Luo@dot.ca.gov. Additionally, for future notifications and requests for review of new projects, please contact LDIGR-D4@dot.ca.gov.

Sincerely,

Mark Leong

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review

cc: State Clearinghouse

City of St. Helena

"We will conduct city affairs on behalf of our citizens using an open and creative process."

1572 Railroad Ave.
St. Helena, CA 94574
Phone: (707) 968-2658
www.cityofsthelena.org

Sent by email
Confirmation of Receipt Requested

August 24, 2020

Attn: Mr. David Morrison, Director
County of Napa
Planning, Building, and Environmental Services Department
Conservation Division
1195 Third Street, Second Floor
Napa, CA 94599-3092
David.Morrison@countyofnapa.org

Re: Notice of Preparation of a Draft Environmental Impact Report for the Proposed Inn at the Abbey Project (Use Permit Major Modification Application No. P19-00038-MOD)

Dear Mr. Morrison:

The City of St Helena is in receipt of the Notice of Preparation ("NOP") of a Draft Environmental Impact Report for the Proposed Inn at the Abbey Project (Use Permit Major Modification Application No. P19-00038-MOD) (the "Project"). The City has reviewed the NOP and offers its comments in this letter.

The Project applicant currently operates a restaurant, winery, and retail uses. The Project entails expanding the existing uses to include a 79-room hotel, which would include a spa, fitness center, outdoor spaces, and employee housing, among other new uses. 50 hotel rooms would be located on what the County has termed the "North Parcel," consisting of four separate parcels north of Lodi Lane, and 29 hotel rooms would be located on the "South Parcel," consisting of two parcels south of Lodi Lane. The Project would be located approximately a half mile north of the City's boundaries in unincorporated Napa County.

The City respectfully requests that the County fully and adequately study, analyze, and provide to the public detailed and accurate information concerning the water demand, supply, and availability for the Project, particularly as the Project applicant and the County appear to assume that the North Parcel will continue receiving and using water supplied by the City. The City, like much of the State of California, experienced extremely low rainfall this year and anticipates a multi-year drought. The City Council recently adopted a resolution enacting Phase 1 water emergency regulations, meaning that water customers must follow specified conservation measures. Thus, it

is of utmost importance to the City that the City has adequate water and that water customers outside of the City use the City's water strictly in compliance with the City's policies and agreements.

The City provides water to the North Parcel pursuant to a water agreement executed by the City and the owner of the Freemark Abbey Winery ("Owner") in March of 2000 ("Agreement"). The Agreement provides that the City will supply to the Owner up to 2,790,000 gallons per year for specified parcels and for specified uses.

Specifically, the Agreement provides that the Owner may use the City's water on four parcels (labeled A, B, C, and D in the Agreement) north of Lodi Lane, or what the County terms the "North Parcel." The City does not have a water agreement with the Owner for provision of City water on the South Parcel, which as proposed would include 29 hotel rooms and the fitness center.

Further, the Agreement provides that the Owner may use the City's water for the following uses: (1)"any and all uses which Owner has historically made of City water," including: agricultural (limited to the vegetable and herb garden); (2) areas on which City water was historically used for agricultural purposes during the six months prior to August 9, 1994, in accordance with Section 18.10 of the City's Code; (3) winery; (4) commercial (including but not limited to the making of beeswax candles); (5) retail (including but not limited to restaurants, bars, delis, catering, and stores); (6) residential; (7) landscaping; and (8) fire protection. The Agreement provides that water use may be used for other purposes on the property provided that the amount of water used does not exceed the annual allocation. But such uses are limited to the specific properties covered by the Agreement and does not include any property south of Lodi Lane.

The City respectfully requests that the County analyze the water supply to the Project in light of the fact that (a) the City and the Project applicant do not have an agreement for the City's provision of water to the South Parcel and (b) that the water supplied to the North Parcel is subject to the maximum annual limitation specified in the Agreement. Based on the City's historical water usage records for the North Parcel, it is the City's opinion that any new water demand will almost certainly be required to be from a source other than the City. The City's records indicate the City provided 2,089,164 gallons to the North Parcel in 2019.

Furthermore, if the County's water analysis indicates that the Project will not have sufficient water without an upward adjustment to the Agreement, the City expects that the County will require adequate mitigation measures for such water impact and that such mitigation measure(s) will not include an upward adjustment to the Agreement. The City currently is not issuing any new will-serve letters for properties located outside of City limits, and the Project applicant as of this date has not asked for either an amendment to the Agreement or a will-serve letter. Thus, any water supplied to the South Parcel must be from a source other than the City, and any water supplied by the City will be limited to the maximum annual allocation specified in the Agreement.

In addition to water, the City is concerned about intersection safety and turning movements at Highway 29 and Silverado Trail from Lodi Lane post project and requests that the County review the potential for additional safety improvements and adequate mitigation measures to address them.

Finally, the City appreciates being informed of the Project by the County. The Agreement requires the Owner to inform the City of any future request or application for a use permit modification which the Owner did in spring 2019. However, the Owner did not update the City when they actually moved forward with the Project submittal or the major modification requested to its existing use permit.

Please feel free to contact me at 707-312-1471 if you have any questions or wish to discuss this further.

Sincerely,

Erica Ahmann Smithies, PE
Director of Public Works/City Engineer
esmithies@cityofsthelena.org
(707) 312-1471

cc: Geoff Ellsworth, Mayor, gellsworth@cityofsthelena.org
Paul Dohring, Vice Mayor, pdohring@cityofsthelena.org
Mary Koberstein, Councilmember, mkoberstein@cityofsthelena.org
Anna Chouteau, Councilmember, achouteau@cityofsthelena.org
David Knudsen, Councilmember, dknudsen@cityofsthelena.org
Mark Prestwich, City Manager, mprestwich@cityofsthelena.org
Maya DeRosa, Planning & Building Director, mderosa@cityofsthelena.org
Trevor Hawkes, Planner III, trevor.hawkes@countyofnapa.org

From: gecalo@comcast.net <gecalo@comcast.net>
Sent: Thursday, July 30, 2020 1:01 PM
To: Hawkes, Trevor <trevor.hawkes@countyofnapa.org>
Subject: P18-00038 Inn at the Abbey / EIR SCOPING COMMENT

[External Email - Use Caution]

Dear Mr. Hawkes,

I like to take the opportunity to insure the EIR of the subject project considers Cumulative Impacts as mandated under Other CEQA Considerations.

CUMULATIVE IMPACTS:

The CEQA Guidelines define cumulative effects as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." The CEQA Guidelines further state that the individual effects can be the various changes related to a single project or the changes involved in a number of other closely related past, present, and reasonably foreseeable future projects (Section 15335). The CEQA Guidelines allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis:

- List method – A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.
- Regional growth projections method – A summary of projects contained in an adopted general plan or related planning document or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact (Section 15130).

I like to draw your attention to:

- A current hotel application at Farmstead in St. Helena of similar scope and size as the subject.
- The Calistoga Hills Resort on Highway 29 in Calistoga currently under construction and approximately 50% larger than the subject. I would like to point out that the EIR of this resort determined that the impacts at the intersection of Highway 29 and Lincoln Avenue in Calistoga were **not** mitigatable. The project was approved by the city of Calistoga citing "overriding considerations". This intersection is situated only 5 miles to the north of the subject.
- The Four Seasons Resort at the Silverado Trail entry to Calistoga is also under construction and approximately 50% larger than the subject, also impacts said intersection. Per the EIR of both resorts, they will generate approximately 3,000 vehicle trips per day.
- Should the regional growth projection method be chosen, the impacts of the current application for a resort of massive proportions at the former Guenoc property in Lake County must be considered

The EIR of the Inn at the Abbey must consider the cumulative impacts as they relate to traffic and specifically through the town of St. Helena and at the Highway 29 / Lincoln Avenue intersection in Calistoga.

George Caloyannidis

From: gecalo@comcast.net <gecalo@comcast.net>
Sent: Tuesday, August 4, 2020 6:21 PM
To: Hawkes, Trevor <trevor.hawkes@countyofnapa.org>
Subject: FW: P18-00038 Inn at the Abbey / EIR SCOPING COMMENT

[External Email - Use Caution]

Dear Trevor,
One more thing on this application:
The standard for employees for high end hotels and resorts is 2 to 2-1/2 per key (room). This is the standard the hotels in Calistoga have adhered to and the Inn at the Abbey not of lesser quality should also adhere to. That number for the Inn ought to be in the vicinity of 160.
Recently, the hotel at Farmstead in St. Helena also submitted the lesser standard number of employees which has been challenged in the record. This new approach is designed to downplay their impact, the most important being the employee housing these hotels should provide. In the past, the in lieu payment per housing unit has been completely unrealistic given the high quality specifications imposed by the State when grants are sought to finance them which is always the case.
At the very minimum, if such housing is not provided ideally on site (as was the case with Solage which donated the property), a site in close proximity must be identified.
Thank you,
George

Napa County Planning, Building and Environmental Services Department

August, 18, 2020

Attention Trevor Hawkes
Planner 111
Planning, Building and Environmental Service
1195 Third Street
Suite 210
Napa, CA 94559

RECEIVED
AUG 19 2020
Napa County Planning, Building & Environmental Services

From: Byrd Hill Road, Tychson Hill and other interested and impacted properties

Dear Mr. Hawkes:

The contents of this letter addresses your letter of July 21, 2020, regarding a draft environmental impact report for the proposed Inn at the Abbey project Application No. P19-00038-MOD.

The described project includes 79 rooms. This seems excessive with the points that will be presented in this letter. The last sentence of paragraph four describes a North Building, split level, 4 levels with a maximum height of 45 feet. This height is excessive given the height of structures in the surrounding area, including St. Helena's height limit of 35 feet. We would like to know where the 45 foot height is determined and would also like to know from which direction it faces. The last line of paragraph seven states that a separate public water system serves the South Parcel. What does that mean?

In your letter, on page 3, first paragraph, water consumption is discussed. We would like to know where the water is coming from, the depth of the aquifer that is being drawn on, the estimated yearly drop in the elevation of the aquifer and, most important, we need complete assurance that all the aquifers in our neighborhood (estimated at 17 each) will not be affected. We assume that the wastewater and grey water systems discussed on page 3 will be in accordance with the California Building/Plumbing code or the Napa County code, whichever is more stringent.

The last line on page 3 of 6 (permits) states that approval for a development agreement is also being requested. We would like to know specifically what this means, and not just in general terms. As the existing and proposed infrastructure capabilities appear to be near maximum, this is a very important issue.

On pages 4 and 5 of potential environmental impacts, we are very concerned about noise, traffic, excessive lighting, and events. Regarding noise - we would ask that construction be limited to Monday through Friday 8AM until 4:30PM with exceptions for utility connections. No

work would be allowed on weekends or holidays. Noise is also relevant to any planned event. We would like to know how many events are planned (on a yearly basis), the estimated number of participants and absolute assurance that these events and noise would terminate at a specific time.
Traffic is a major issue and concern. Currently, there are seven in and out points along the west side of Highway 29 through the length of the project. These include Byrd Hill Road (1), Valle Vista Mobile Home Park (2), Tychson Road (1) and three private residences. Entering or leaving Highway 29 is currently very dangerous in both directions with reduced sight distances and a jog in the road at Lodi Lane. With the addition of a 79 room hotel, the situation will only deteriorate. In the event of a large planned event, the situation could become dangerous. Something must be done to mitigate the change in traffic conditions.

This concludes our comments at this time. We want to convey that the planned project is stunning and cleans up a blighted area that needs responsible development. The County and the Jackson Family must understand that the proposed development will change our neighborhood forever! What we are pointing out will affect our lives for the remainder of the time we live here. We ask that you not only consider but act upon our comments.

We look forward to hearing from you and developing a responsible discourse.
Attached are the signatures, addresses and email addresses of those who are concerned with the points addressed in this letter.

Friday 8AM until 4:30PM with exceptions for utility connections. No work would be allowed on weekends or holidays. Noise is also relevant to any planned event. We would like to know how many events are planned (on a yearly basis), the estimated number of participants and absolute assurance that these events and noise would terminate at a specific time.
Traffic is a major issue and concern. Currently, there are seven in and out points along the west side of Highway 29 through the length of the project. These include Byrd Hill Road (1), Valle Vista Mobile Home Park (2), Tychson Road (1) and three private residences. Entering or leaving Highway 29 is currently very dangerous in both directions with reduced sight distances and a jog in the road at Lodi Lane. With the addition of a 79 room hotel, the situation will only deteriorate. In the event of a large planned event, the situation could become dangerous. Something must be done to mitigate the change in traffic conditions.

This concludes our comments at this time. We want to convey that the planned project is stunning and cleans up a blighted area that needs responsible development. The County and the Jackson Family must understand that the proposed development will change our neighborhood forever! What we are pointing out will affect our lives for the remainder of the time we live here. We ask that you not only consider but act upon our comments.

We look forward to hearing from you and developing a responsible discourse.
Attached are the signatures, addresses and email addresses of those who are concerned with the points addressed in this letter.

(1) 3051 Saint Helena Hgwy N
Saint Helena, CA 94574

AND

(2) 3047 Saint Helena Hgwy N
Saint Helena, CA 94574

MIGUEL SOLARES
miguel@solaresvineyards.com

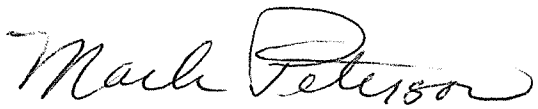
Bill,

I like your letter and would be happy to have our name on it. I have also enclosed my business card in case you need to reach us for any reason.

Look forward to being your neighbor.

Fred & Krista

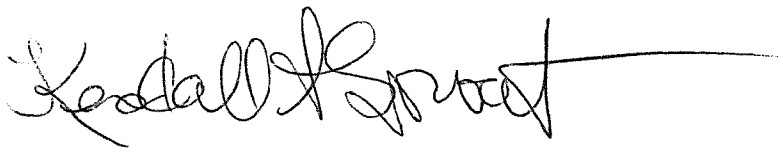
3075 N. St. Helena Hwy
St. Helena CA 94574
louisstephan@amcor.com

1. 

Mark Peterson
3077A St. Helena Hwy. No.
Saint Helena, CA 94574
kramark55@comcast.net

2.

Noelle Peterson
3023 St. Helena Hwy. No.
Saint Helena, CA 94574
noellepeterson@comcast.net

3. 

Kendall Mund
3077 St. Helena Hwy. No.
Saint Helena, CA 94574
ksproat1@gmail.com

Gmail Antonia Allegra <antonia.allegra@gmail.com>

Signature/info re Inn at the Abbey 8-18-2020

Antonia Allegra <antonia.allegra@gmail.com> Sun, Aug 16, 2020 at 5:39 PM
To: Antonia Allegra <antonia.allegra@gmail.com>

Antonia Allegra
3085 St. Helena Highway North
St. Helena, CA 94574

antonia.allegra@gmail.com

Antonia Allegra

Ms. Antonia L. Allegra
P.O. Box 663
Saint Helena, CA 94574-0663

Baswell

SIGNATURE PAGE 4

L. Reece Baswell 3053 ST HELENA Hyw N CALIFORNIA Lowercase

Miguel Loyola 3043 North HWY SP #9 ST Helena Calif.

jog in the road at Lodi Lane. With the addition of a 79 room hotel, the situation will only deteriorate. In the event of a large planned event, the situation could become dangerous. Something must be done to mitigate the change in traffic conditions.

This concludes our comments at this time. We want to convey that the planned project is stunning and cleans up a blighted area that needs responsible development. The County and the Jackson Family must understand that the proposed development will change our neighborhood forever! What we are pointing out will affect our lives for the remainder of the time we live here. We ask that you not only consider but act upon our comments.

We look forward to hearing from you and developing a responsible discourse.
Attached are the signatures, addresses and email addresses of those who are concerned with the points addressed in this letter.

Address: 3079 Saint Helena Highway North
Saint Helena, CA. 94574

Peter O'Sullivan
Peter OSullivan
peter0@gmail.com
415.730.1926

Nava O'Sullivan
navaosullivan@gmail.com
650-504-6353

SIGNATURE PAGE 3

Paula R Young
3057 St. Helena Hwy. N.
pawyo67@gmail.com

Barbara G. Galante
3073 St. Helena Hwy N.
bagalante@comcast.net

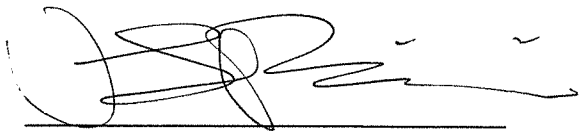
SIGNATURE PAGE

Name	Address	email
1. Karen C. Olivo	3023 St. Helena Hwy N. St. Helena, CA 94574	kcolivo@earthlink.net
2. Roy Bisagno	3021 St. Helena HWY. S-H. CA 94574	KRBIS@COMCAST.NET
3. Katherine K. Bisagno	3021 St. Helena Hwy St Helena CA 94574	Krbis@comcast.Net
4. Fabrica Berry	3019 St. Helena Hwy N.	Bearfastehat mail.com
5. Frederick Berry	3019 St. Helena Hwy. N	Bearfastehat Mail.com
6. Thomas D. Olivo	3023 St. Helena Hwy	OLIVDHZ@EARTHLINK
7. Sylvia Hobleman	3023B St Helena Hwy N.	sylviahobleman@gmail.com
8.		
9.		
10.		
11.		
12.		

Vincent L. Ricci

3059 St. Helena Highway North St. Helena CA 94574

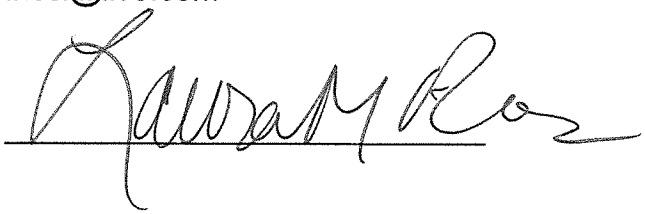
vlricci@gmail.com



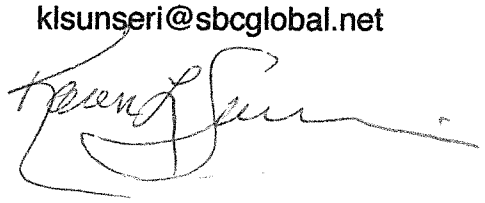
Laura M. Ricci

3059 St. Helena Highway North, St. Helena CA 94574

lricci@live.com



Karen L. Sunseri
3081 St. Helena Hwy. North
St. Helena, California 94574
klsunseri@sbcglobal.net



SIGNATURE PAGE

(1)

Signature: Lois Gouveia

Print: Lois Gouveia

Address: 1163 Ehlers Lane, St. Helena

Date: 8/15/20

(2) Jeanne F. McCann-Baswell

Jeanne F. McCann-Baswell
3053-ST. Helena Hwy N.
St. Helena, CA. 94574

SIGNATURE PAGE

Signature:

Print: Jozef Stelbasky, DVM

Address: 1161 Ehlers Lane, St. Helena CA 94574

Date: 8/15/20

The Inn at the Abbey

Hold your horses here. A GeoTechnical report will not include proper assessment of earth quake threats .... All these "experts" do is check the Alquist-Priolo database, and if there is no map covering a quadrant they can describe a project site as seismically safe or the risk of earthquakes as "less than significant." This is where our difficulties lie, as an Alquist-Priolo Map is not yet available for this segment of the West Napa Fault. Neither the St. Helena quadrant from Yountville to Deer Park Lane, nor the Calistoga quadrant from Deer Park to two miles past Calistoga and right along Hwy. 29 then Hwy. 128 has been completed.

The foregoing doesn't mean the project gets a green light, as the County's own Earthquake Map and Liquefaction Map cites the fault as "high risk" due to liquefaction which amplifies shock waves This amplification in Mexcio's recent earthquake began as a 6.2 M quake 65 miles southwest of Mexico City , which amplified by liquefaction to greater than 8.0 M , causing collapse of many buildings in Mexico City, a number of which were developed after 1960 -- and pan-caked.

Alquist-Priolo identifies this type of risk and bars any new construction within ¼ mile (both sides) of an active fault line. The state, equipped with such a map, moves along the overall ¼ mile zone and red tags buildings for removal. No commercial activities are permitted in the zone. This has been going on in American Canyon and City of Napa which both have maps as of 2016. The reason for clearing this zone is that our Building Codes can protect us only for quakes of up to 7.0 M. The next break of the West Napa Fault is forecast to be 7.0 M. Beyond that, directly moving with an active liquefaction zone, the only way to remain safe is not to develop any commercial buildings. Residences can remain

within that zone as long as they are at least 50 feet away from the fault line/trace line..

The enclosed analysis I developed from USGS materials and information from a PhD in Seismology, Dr. Mike Oskin, Chairman of the Department of Geology at U.C. Davis, will explain the threats posed by the proposed Inn at the Abbey building site. Per USGS, there is a 98% chance of a 6.0 M quake or stronger in the next 24 years. Any quake along the Hayward Fault or break in the West Napa Fault will seriously amplify along the course of the West Napa Fault. USGS has also developed "shake maps" that are glowing red to purple and coming in at 8.5 M and stronger the entire length of the West Napa Fault ... the shake maps available online show the serious effects of amplification from liquefaction.

Now please take a few minutes to view two maps from Napa County's General Plan Safety element to see how serious these threats are.. They are the 2009 Earthquake Hazard Map and the 2009 Liquefaction Hazard Map when Lidar satellite imaging confirmed the West Napa Fault had awakened from its 11,000 year rest to become an "active fault" with the 2000 Yountville earthquake. The forecast 6.0 M Napa quake was accurate.

Also enclosed is a surface tracing map from USGS that shows the many fractures of the West Napa Fault in Napa, as well as its course up the valley. It lies on the "west" side of Hwy. 29 the length of the valley. From the surface tracing map one can easily identify the West Napa Fault running "across the street' from the extant Freemark Abbey Winery and buildings at Lodi Lane, and a reverse fault lying under the Freenark Abbey site. There would be two Alquist Priolo zones at this site.

The geo-technical assessment is frightening for its serious oversight. No one even looked at the County's General Plan

Safety Element. It takes a PhD in Seismology to properly assess these risks at the Inn at the Abbey site. or critical review of the maps and materials enclosed.

This project site has far more problems than Carneros Inn, which tried to tap a nearby irrigation pond for conversion to waste treatment. Both County ordinances and state law require that any development in rural areas must be able to process its waste on site and cannot be growth inducing. The applicant is barred by law from using the Makham Winery's waste treatment pond. Only a critical emergency and litigation by the county permitted the Buckhorn Mobile Home Park to share this treatment site. An environmental and health hazard resulted in this one exception in order to preserve affordable housing.

Carneros Inn was required to process waste on its own site. Thus, 7 luxury cottages were pulled from the designs in order to accommodate an onsite contained facility. When entering the Inn from the highway at the Boon Fly Café, note the café is on the right and immediately to the left is the waste treatment plant.

The Red Hen site bears no resemblance to this project as it lies well outside of the Alquist-Priolo zone

The Inn at the Abbey plan, to those of us more familiar with land use in Napa County, is practically "goofy" and is prone to distorting realities as already found from the applicant's dismissal of the seismic hazards at the site.

Lois Ann Battuello, dated August 12, 2020
1634 Main Street
St. Helena, CA 94574
(707) 963-8960 or loisbatt@comcast.net

Lois Ann Battuello

AN ANALYSIS OF BAY AREA EARTHQUAKES AND USGS FORECASTS

The USGS has been accurate in its 30-year forecasts, as there has been at least one 6.0 M quake or greater within their set timeframe since 1959. Prior to that, there was only one quake just under 6.0 M from 1906 forward. This information is from the "List of Earthquakes in California" (Google the term and look for the Wiki link) and historic USGS forecasts (Google "Earthquake Outlook for San Francisco Bay Region 2014-2043).

Each time there is a 6.0 or greater quake, a new 30-year forecast has been made by USGS. Here are the differences since Napa's 8/24/14 earthquake:

(1) Probabilities have moved from 72% to 98% for a quake of 6.0 M or greater for the first time. Before: Probabilities were 72% or 70%

(2) USGS in 2014 increased the probabilities to include one "or more" events as shown in their Earthquake Outlook for the first time

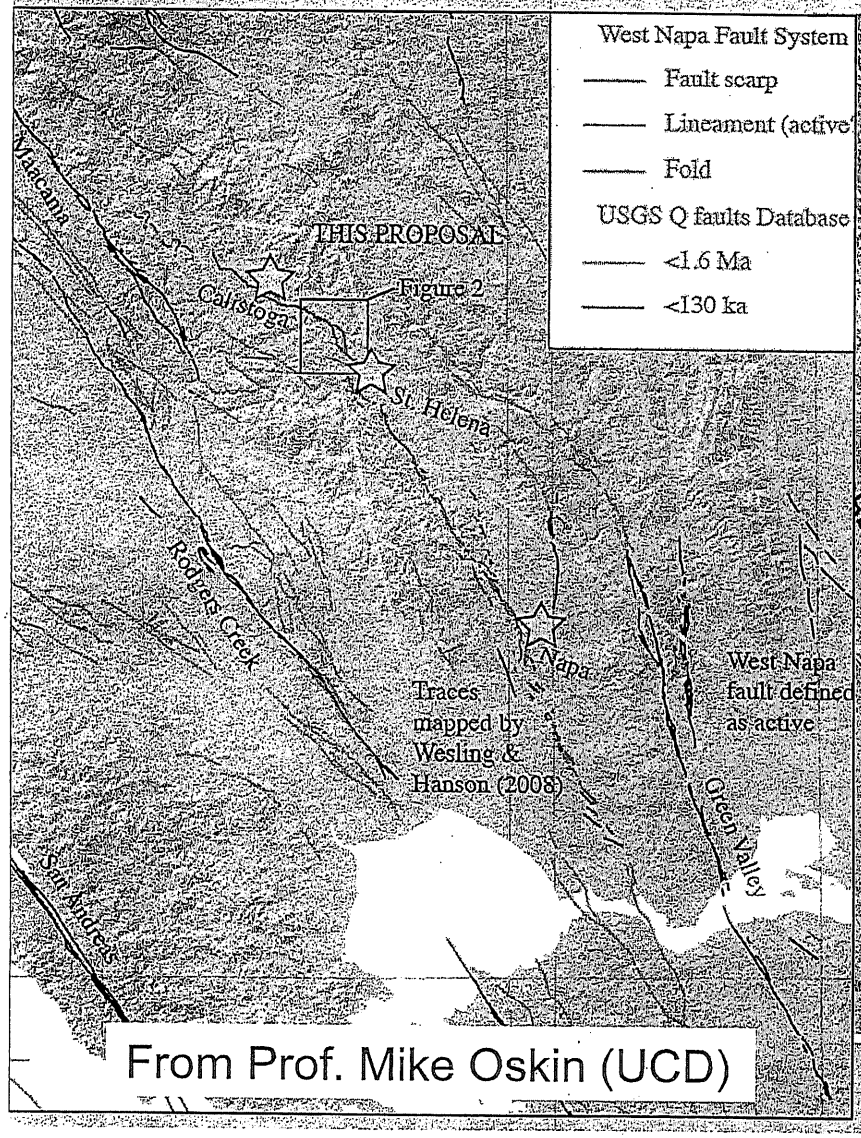
(3) USGS now adds the 72% probability of a 6.7 M or greater. This is the first time there has been a forecast probability for a 6.7 M or greater event.

All of this is new data since the Napa Earthquake of 8/24/14. The West Napa Fault erupted for the first time in 11,000 years to 45 miles in length.

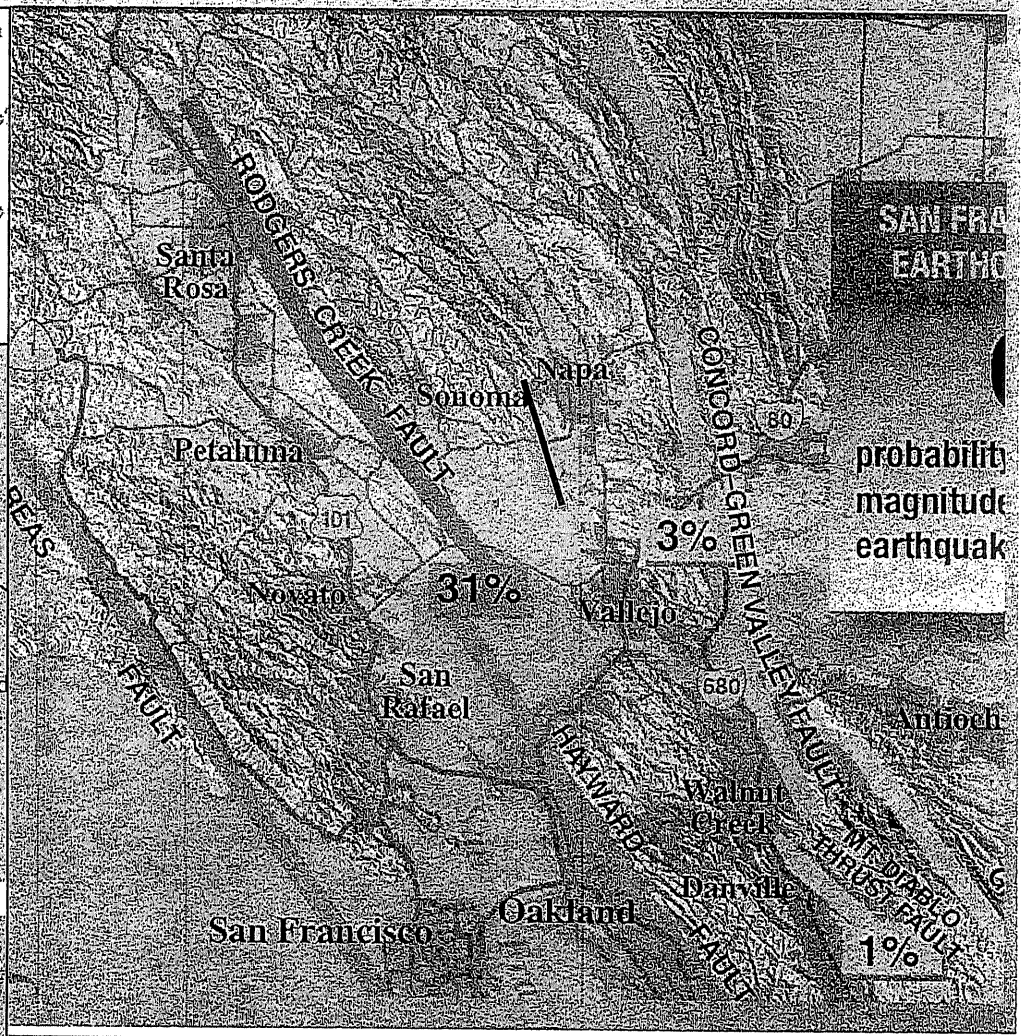
We are more seismically active, as faults are building pressure, and are occurring within shorter time-frames. Hence the probability is 98%.

Since 1868, there have been four major earthquakes in San Francisco and the North/East Bay Area that have been felt in Napa: 1868 Hayward; 1906 San Francisco; 1989 Loma Prieta; 2014 West Napa. Three of the four occurred at night when people were in their beds between 1:20 a.m. and 5:19 a.m. Loma Prieta broke at approximately 5:00 p.m. Three of the four occurred just before or just after the Fall Equinox (Sept.). Only the San Francisco Earthquake of 1906 occurred just weeks after the Spring Equinox (Mar.) on April 18, 1906.

The West Napa Fault was identified as active, capable of M 6 event (2009)



From Prof. Mike Oskin (UCD)



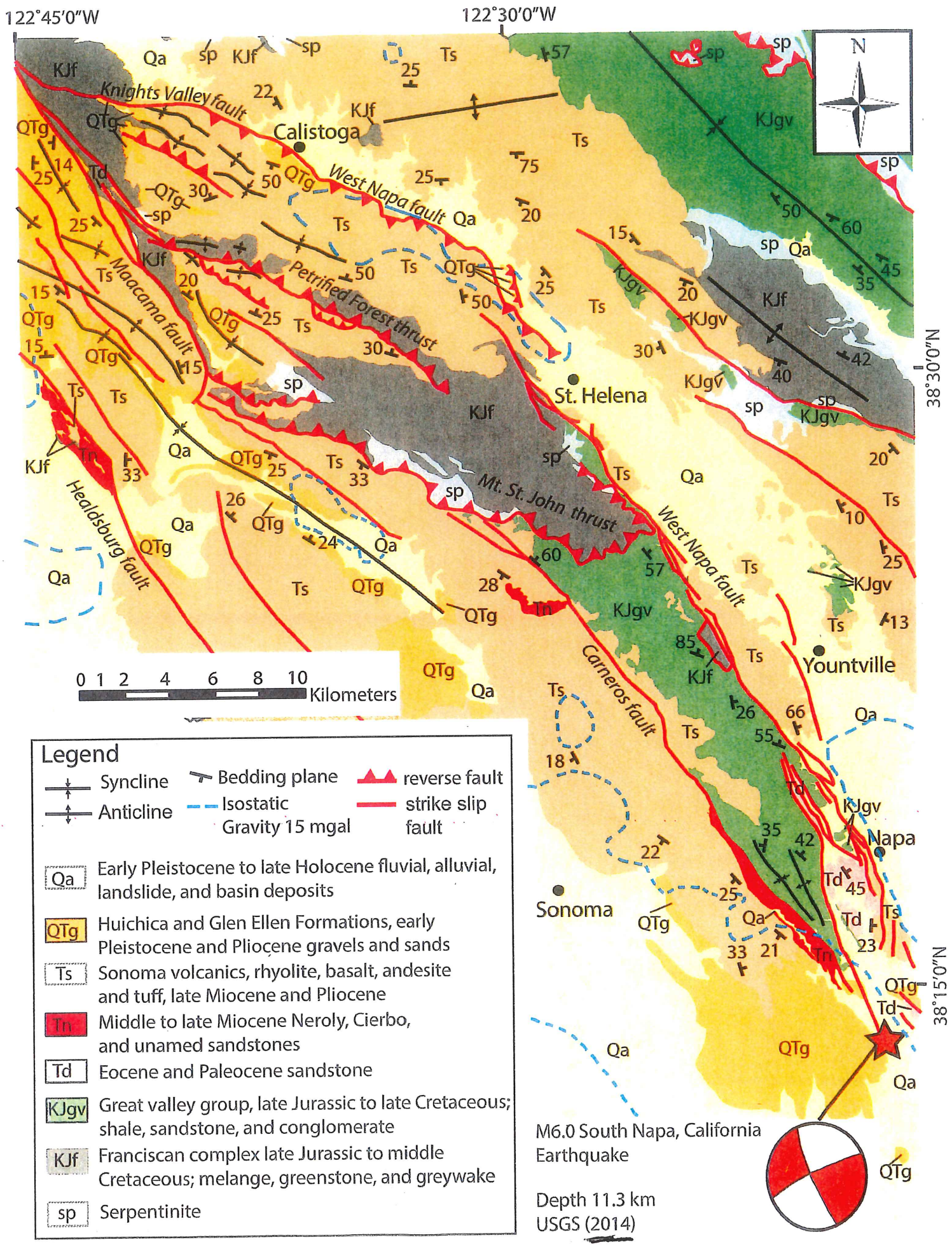

122°45'0"W
122°30'0"W
38°30'0"N
38°15'0"N
N
Knights Valley fault
West Napa fault
Petrified Forest thrust
Maacama fault
Healdsburg fault
Mt. St. John thrust
Carneros fault
Calistoga
St. Helena
Yountville
Napa
Sonoma
0 1 2 4 6 8 10 Kilometers
Legend
Syncline
Anticline
Bedding plane
Isostatic Gravity 15 mgal
reverse fault
strike slip fault
Qa Early Pleistocene to late Holocene fluvial, alluvial, landslide, and basin deposits
QTg Huichica and Glen Ellen Formations, early Pleistocene and Pliocene gravels and sands
Ts Sonoma volcanics, rhyolite, basalt, andesite and tuff, late Miocene and Pliocene
Tn Middle to late Miocene Neroly, Cierbo, and unamed sandstones
Td Eocene and Paleocene sandstone
KJgv Great valley group, late Jurassic to late Cretaceous; shale, sandstone, and conglomerate
KJf Franciscan complex late Jurassic to middle Cretaceous; melange, greenstone, and greywake
sp Serpentinite
M6.0 South Napa, California Earthquake
Depth 11.3 km
USGS (2014)

FIGURE SAF-1: EARTHQUAKE FAULTS

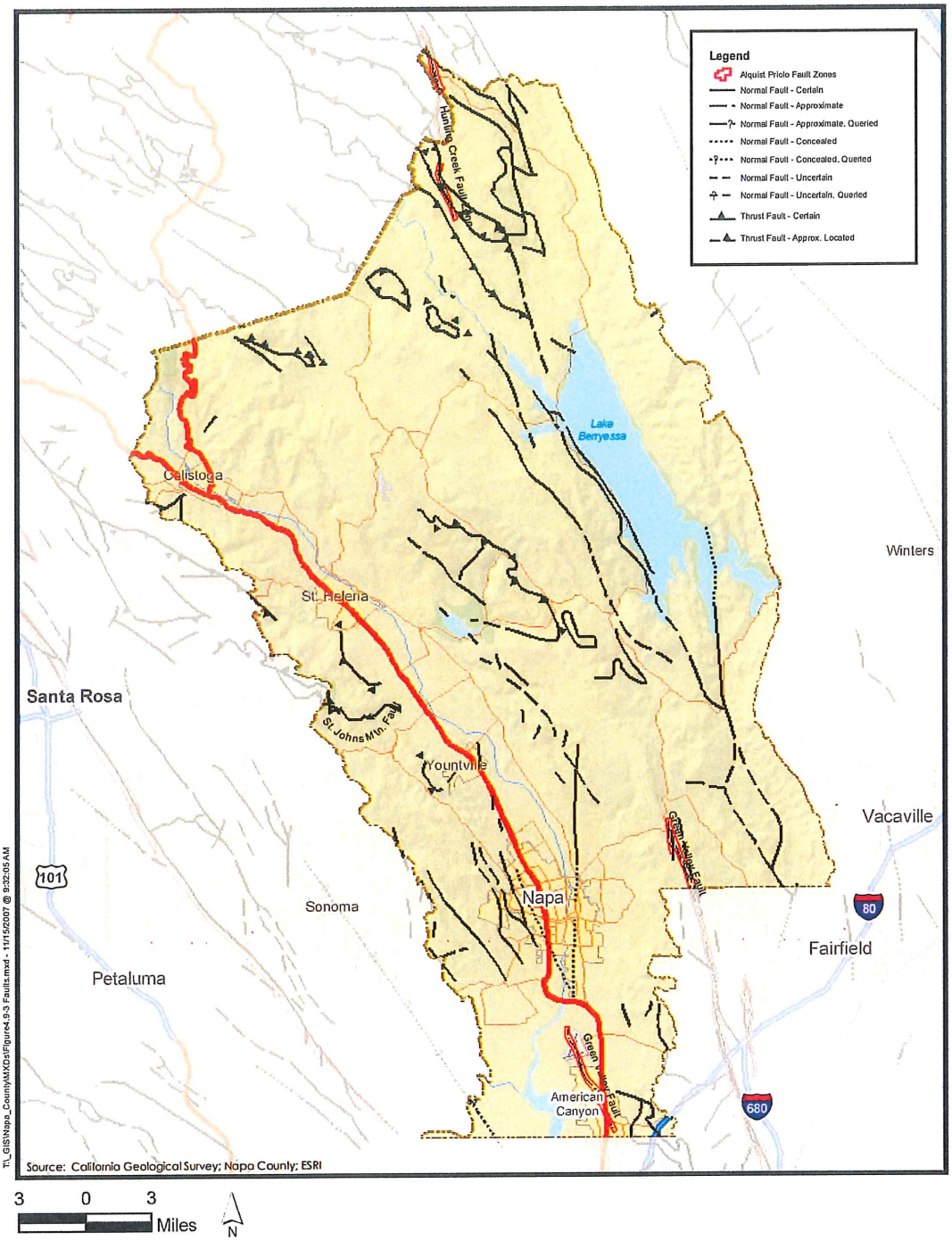
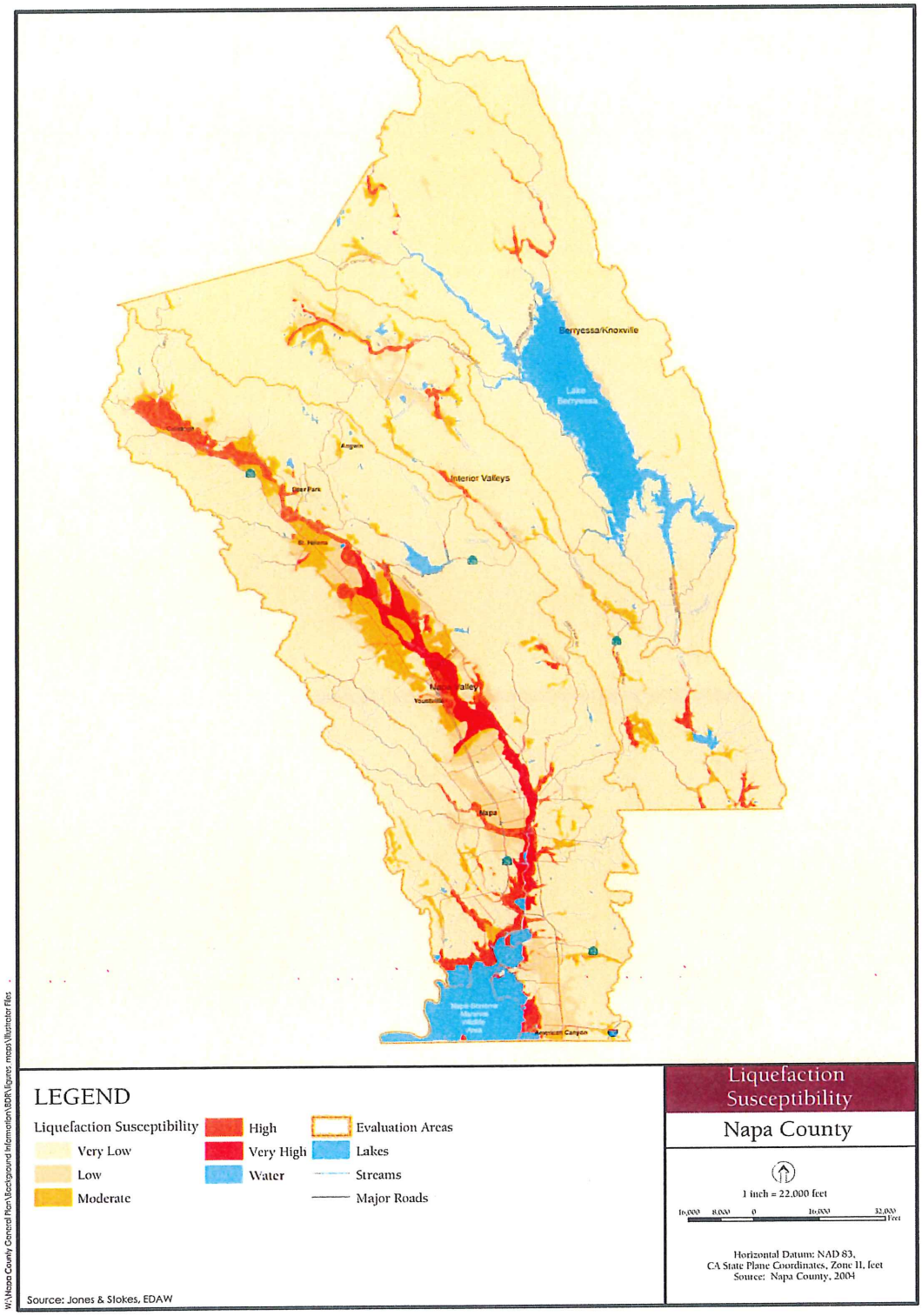
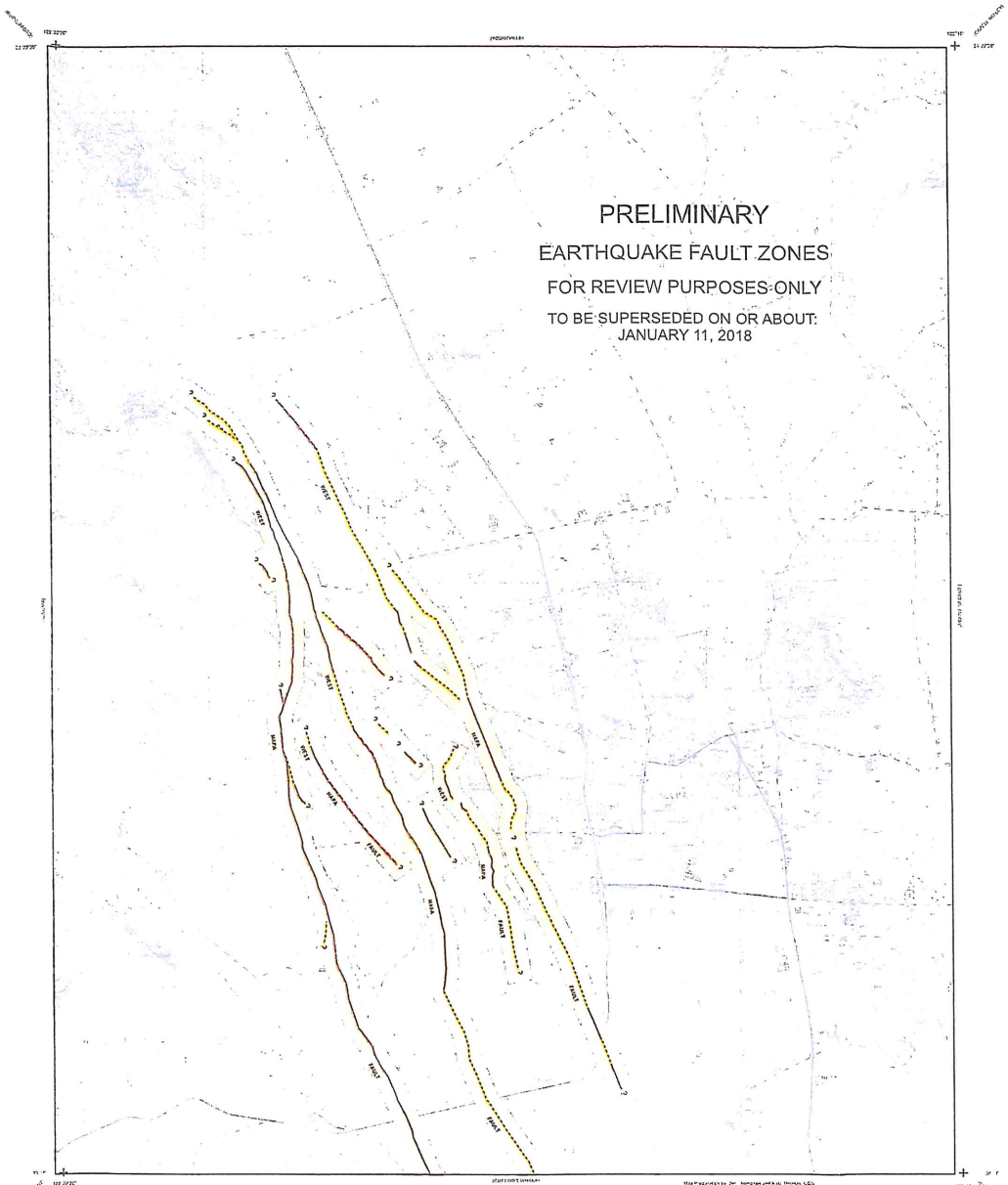


FIGURE SAF-4: LIQUEFACTION SUSCEPTIBILITY





Study area defined by USGS quadrangle boundaries using NAD 27 as represented by the middle map extent. Data are maintained and displayed in NAD 83 (EPSG 3310) California Albers (metric) as shown by tics and coordinates.
Topographic base map from USGS 1951 photorevised 1980.

Scale 1 24,000

Contour Interval 20 Feet

California Geological Survey
Geologic Information and Publications
801 K Street, MS 14-34
Sacramento, CA 95814-3532
www.conservation.ca.gov/cgs

Earthquake Zones of Required Investigation
Napa Quadrangle

California Geological Survey

This Map Shows Alquist-Priolo Earthquake Fault Zones.
Seismic Hazard Zones Have Not Been Prepared for the Napa Quadrangle.

This map shows the location of Preliminary Alquist-Priolo (AP) Earthquake Fault Zones, also referred to here as Earthquake Zones of Required Investigation. These zones were prepared by the California Geological Survey (CGS) to assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of surface fault rupture as required by the AP Earthquake Fault Zoning Act (Public Resources Code Sections 2621-2630). Though not present on this map at this time, CGS also prepares Zones of Required Investigation for earthquake-triggered landslides and soil liquefaction as required by the Seismic Hazard Mapping Act (Public Resources Code Sections 2690-2699.6). The purpose of releasing these Preliminary Zones before zone maps become official is to allow for public review and comment as described in the Policies and Criteria of the State Mining and Geology Board (California Code of Regulations Section 3602).

For information regarding the general approach and recommended methods for preparing these zones, see CGS Special Publication 42, *Fault-Rupture Hazard Zones in California*. Special Publication 42 also contains information regarding the scope and recommended methods to be used in conducting required site investigations in Appendix C. *Guidelines for Evaluating the Hazard of Surface Rupture*. For a general description of the AP Act, CGS zonation programs, and related information, please refer to the CGS website at www.conservation.ca.gov/cgs

MAP EXPLANATION

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONES

Earthquake Fault Zones
Zone boundaries are delineated by straight-line segments. the boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faulting or fault creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required

Active Fault Traces
Faults considered to have been active during Holocene time and to have potential for surface rupture. Solid Line in Black or Red where Accurately Located. Long Dash in Black or Solid Line in Purple where Approximately Located. Short Dash in Black or Solid Line in Orange where Inferred. Dotted Line in Black or Solid Line in Rose where Concealed. Query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by fault creep.

1906 C
?

ADDITIONAL INFORMATION

For additional information on the zones of required investigation presented on this map, the data and methodology used to prepare them, and additional references consulted, please refer to the following:

The West Napa Fault in the Napa and Cuttings Wharf 7.5-Minute Quadrangles
Napa and Solano counties, California.
California Geological Survey Fault Evaluation Report FER-256
http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/FER256

For more information on the Alquist-Priolo Earthquake Fault Zoning Act please refer to:
http://www.conservation.ca.gov/cgs/rghm/ap/Pages/main.aspx

Click the link below to learn how to take greater advantage of the GeoPDF format of this map when downloading:
http://gmw.conservation.ca.gov/SHP/EZRIM/Documents/GeoPDF_Help.pdf

NAPA QUADRANGLE

EARTHQUAKE FAULT ZONES

Delineated in compliance with Chapter 7.5,
Division 2 of the California Public Resources Code
(Alquist-Priolo Earthquake Fault Zoning Act)

PRELIMINARY REVIEW MAP

Released: July 13, 2017
To Be Superseded on or About: January 11, 2018

IMPORTANT

PLEASE NOTE THE FOLLOWING FOR ZONES SHOWN ON THIS MAP

1) This map may not show all faults that have the potential for surface fault rupture either within the Earthquake Fault Zones or outside their boundaries. Additionally, this map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a single earthquake capable of causing liquefaction or triggering landslide failure will not uniformly affect the entire area zoned.

2) Faults shown are the basis for establishing the boundaries of the Earthquake Fault Zones.

3) The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been depicted as accurately as possible at a map scale of 1:24,000.

4) Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toes of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.

5) Landslide zones on this map were determined, in part, by adapting methods first developed by the U.S. Geological Survey (USGS). Landslide hazard maps prepared by the USGS typically use experimental approaches to assess earthquake-induced and other types of landslide hazards. Although aspects of these new methodologies may be incorporated in future CGS seismic hazard zone maps, USGS maps should not be used as substitutes for these Official SEISMIC HAZARD ZONES maps.

6) USGS base map standards provide that 90 percent of cultural features be located within 40 feet (horizontal accuracy) at the scale of this map. The identification and location of liquefaction and earthquake-induced landslide zones are based on *available* data. However the quality of data used is varied. The zone boundaries depicted have been drawn as accurately as possible at this scale.

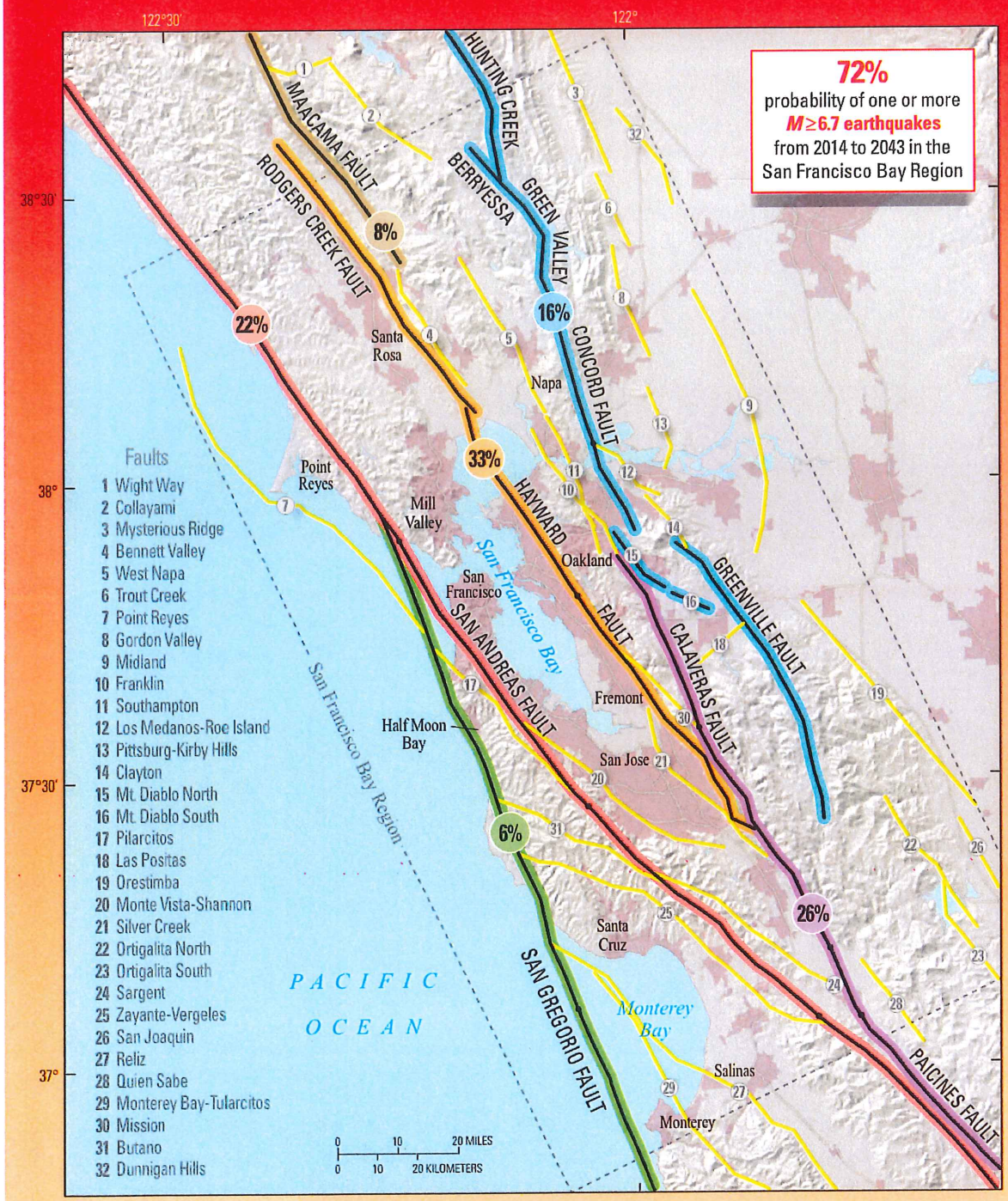
7) Information on this map is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under Chapters 7.5 and 7.8 of Division 2 of the California Public Resources Code.

8) Seismic Hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.

9) DISCLAIMER. The State of California and the Department of Conservation make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

USGS
science for a changing world

Earthquake Outlook for the San Francisco Bay Region 2014–2043



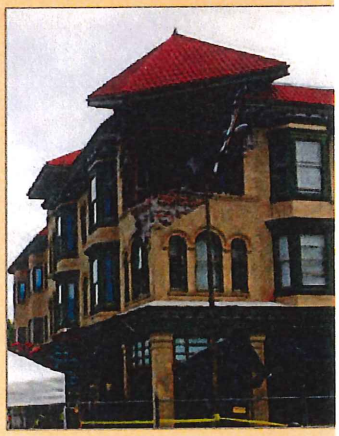
Using information from recent earthquakes, improved mapping of active faults, and a new model for estimating earthquake probabilities, the 2014 Working Group on California Earthquake Probabilities updated the 30-year earthquake forecast for California. They concluded that there is a 72 percent probability (or likelihood) of at least one earthquake of magnitude 6.7 or greater striking somewhere in the San Francisco Bay region before 2043. Earthquakes this large are capable of causing widespread damage; therefore, communities in the region should take simple steps to help reduce injuries, damage, and disruption, as well as accelerate recovery from these earthquakes.

EXPLANATION

- Major plate boundary faults
- (3) Lesser-known smaller faults
- Urban areas

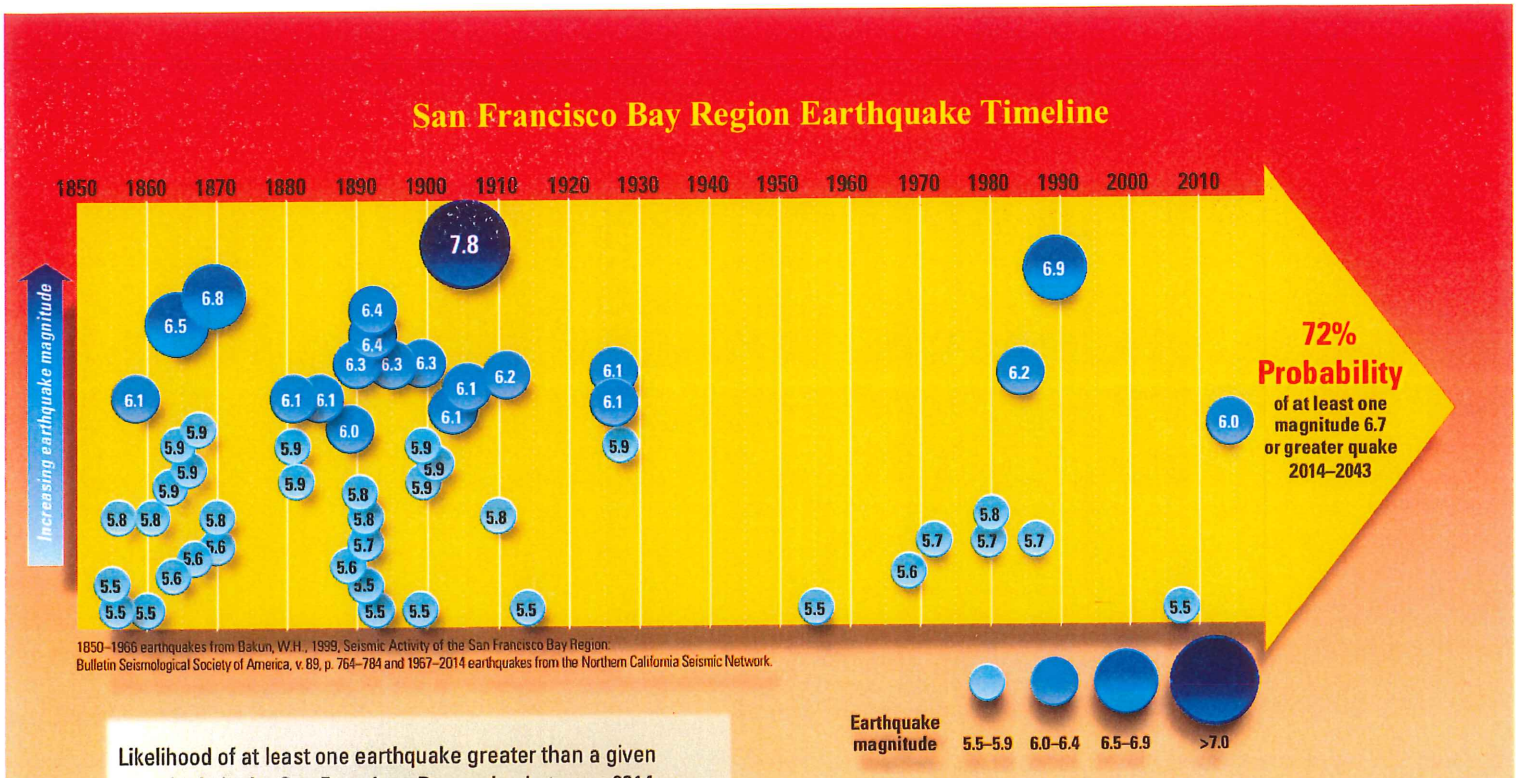
Map of known active faults in the San Francisco Bay region. The 72 percent probability of a magnitude 6.7 or greater earthquake includes the well-known major plate-boundary faults, lesser-known faults, and unknown faults. The percentage shown within each colored circle is the probability that a magnitude 6.7 or greater earthquake will occur somewhere on that fault system by the year 2043. The probability that a magnitude 6.7 or greater earthquake will involve one of the lesser-known faults is 13 percent.

Building damaged in 2014 South Napa earthquake. Photograph by Erol Kalkan, U.S. Geological Survey.



U.S. Department of the Interior
U.S. Geological Survey

Fact Sheet 2016–3020
Revised August 2016 (ver. 1.1)



Likelihood of at least one earthquake greater than a given magnitude in the San Francisco Bay region between 2014 and 2043.

Magnitude (*M*)	30-year likelihood of at least one earthquake in the San Francisco Bay region
$M \geq 6.0$	98 percent
$M \geq 6.7$	72 percent
$M \geq 7.0$	51 percent
$M \geq 7.5$	20 percent

Timeline of magnitude 5.5 and greater earthquakes in the San Francisco Bay region 1850–2014. In the 50 years prior to 1906, there were 13 earthquakes with a magnitude between 6 and 7, but only 6 earthquakes of similar magnitude in the 110 years since 1906. The rate of large earthquakes is expected to increase from this low level as tectonic plate movements continue to increase the stress on the faults in the region.

Earthquake Preparedness Helps

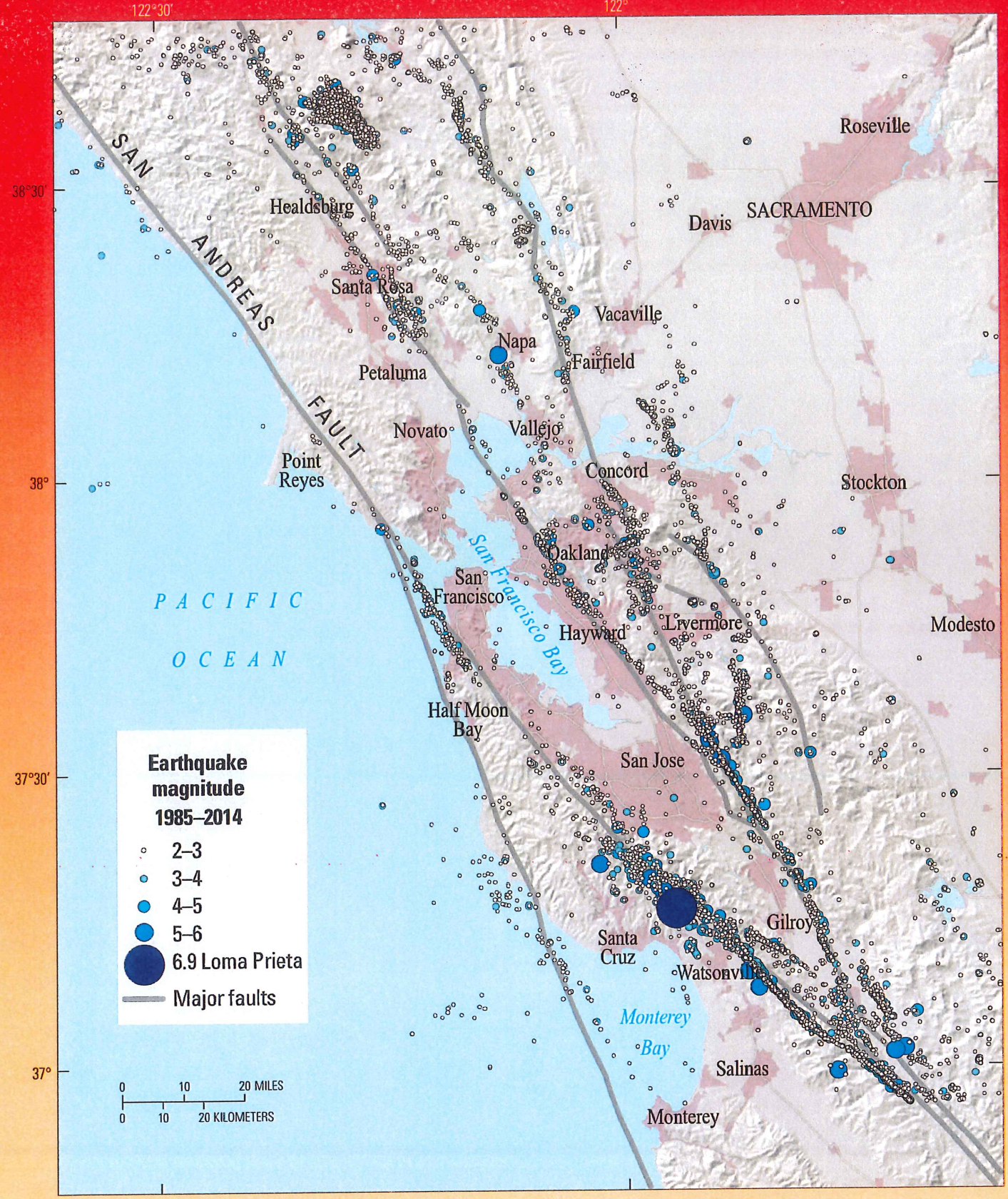
Early Sunday morning on August 24, 2014, the residents of Napa, California, were jolted awake by a strong, magnitude 6.0 earthquake. Within 30 minutes, the staff of Becoming Independent, a non-profit organization that helps adults with intellectual disabilities lead independent lives, called the people they serve in the affected area. The staff quickly visited all of the clients that needed help with cleanup and making their homes safe, a task made easier because both groups were trained in disaster preparedness and the clients had emergency kits with needed supplies on hand. The South Napa earthquake shifted houses off their foundations, damaged chimneys, started fires, and broke water mains throughout the city, causing hundreds of millions of dollars in economic losses. Many historic masonry buildings in downtown Napa were damaged. The earthquake was the largest in the San Francisco Bay region since the 1989 magnitude 6.9 Loma Prieta earthquake and a clear reminder of the seismic vulnerability of the region. The staff and clients of Becoming Independent showed that understanding and preparing for these events can improve how we live with future earthquakes.

Why Does the San Francisco Bay Region Have Earthquakes?

The same geologic process that is responsible for the San Francisco Bay region's beautiful coastlines, bays, hills, and valleys is also the primary driving force for earthquakes along faults in the region. The Bay region is located within the active boundary between the Pacific and the North American tectonic plates, where the Pacific plate slowly and continually slides northwest past the North American plate. The San Andreas Fault, on which two magnitude 7.8–7.9 earthquakes have occurred in historical time, including the 1906 San Francisco earthquake, is the fastest slipping fault along the plate boundary. Other major plate boundary faults in the San Francisco Bay region include the Hayward, Rodgers Creek, Calaveras, Maacama, San Gregorio, Concord, Green Valley, and Greenville Faults.

How Do Scientists Calculate Earthquake Probability?

Scientists rely upon a variety of techniques to help understand the rate and magnitude of past earthquakes in order to estimate the likelihood of future earthquakes. The Global Positioning System (GPS) and other land surveying and geologic techniques have allowed scientists to make more accurate measurements of how the current plate motions—totaling 1.6 inches per year across the San Francisco Bay region—distribute stress onto these individual faults. Balancing plate motions with the slip during large earthquakes and slow creep on faults allows scientists to calculate average rates of earthquake occurrence over periods of hundreds to thousands of years. (Continued on page 4)



Map of earthquakes greater than magnitude 2.0 in the San Francisco Bay region from 1985–2014. Small earthquakes occur on both major faults (shown by the gray lines) and minor faults (not shown). Because of the variability of fault geometry, earthquakes at depth do not always coincide with the mapped faults at the Earth's surface. There are sections of major faults, particularly the San Andreas Fault, with few or no small earthquakes but they will produce large earthquakes in the future. Compiled from the Northern California Seismic Network.

(Continued from page 2). A trench excavated across the Hayward Fault in Fremont revealed evidence of 12 large earthquakes over the past 1,900 years. The time interval between these earthquakes ranged from about 100 to 210 years. Historical records indicate that the most recent large earthquake on this fault occurred in 1868. However, detailed information about other past earthquakes in the San Francisco Bay region is difficult to obtain because seismograph records only go back to about 1900, historical accounts are sparse before 1850, and there are limited locations where faults can be trenched to identify and date prehistoric earthquakes.

Calculating accurate earthquake probabilities for short periods, such as 30 years, is also challenging. Although the 30-year time interval is convenient for humans, it is much less than the average time between large earthquakes on these faults, which can range from hundreds to thousands of years. The rate of large earthquakes in the San Francisco Bay region was high in the late 1800s but dropped abruptly after the 1906 San Francisco earthquake on the San Andreas Fault. Scientists believe that the post-1906 earthquake rate decreased because the large amount of slip along the San Andreas Fault in 1906 temporarily reduced the stress on many of the faults in the region. However, the ongoing motion of the tectonic plates began rebuilding stresses after the 1906 event, and earthquakes larger than magnitude 5.5 resumed during the second half of the 20th century. Future large, damaging earthquakes in the San Francisco Bay region, similar in size to the 1989 Loma Prieta and 1906 San Francisco earthquakes, may or may not be accompanied by the level of earthquake activity observed in the late 1800s.

The 2014 Uniform California Earthquake Rupture Forecast version 3 (http://pubs.usgs.gov/fs/2015/3009/) provides an updated estimate of the likelihood of large earthquakes in California over a 30-year time window from 2014 to 2043. The forecast accounts for how fast stress is accumulating on each fault due to plate motions and the time since its most recent large earthquake(s). In updating the probability calculations, scientists used a more complete set of faults for the San Francisco Bay region than those used in the previous (2008) calculations, adding 32 smaller faults to the 5 major fault systems. The new study has also incorporated more options for how multiple faults might rupture together in large earthquakes.

Probabilities of Earthquakes in the San Francisco Bay Region

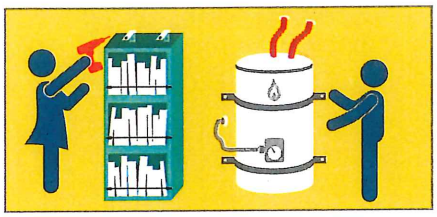
Smaller earthquakes occur more frequently than larger earthquakes. The probability that an earthquake of magnitude 6.0 or larger will occur before 2043 is 98 percent. The probability of at least one earthquake of magnitude 6.7 or larger in the San Francisco Bay region is 72 percent, and for at least one earthquake of magnitude 7.0 or larger it is 51 percent. These probabilities include earthquakes on the major faults, lesser-known faults, and unknown faults.

The probability of a large earthquake occurring on an individual fault in the San Francisco region is lower than the probability of an earthquake occurring anywhere in the region. The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward, Rodgers Creek, Calaveras, and San Andreas Faults. In this 30-year period, the probability of an earthquake of magnitude 6.7 or larger occurring is 22 percent along the San Andreas Fault and 33 percent for the Hayward or Rodgers Creek Faults. Individual sections of these faults have lower probabilities for large earthquakes to occur (continued on page 6);

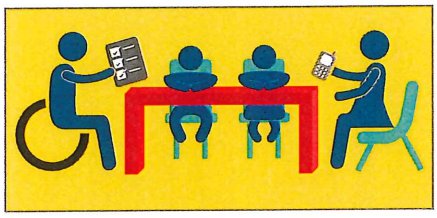
Seven Steps to Earthquake Safety

PREPARE

Before the next big earthquake we recommend these four steps that will make you, your family, or your workplace better prepared to survive and recover quickly:



Step 1: Secure your space by identifying hazards and securing moveable items.



Step 2: Plan to be safe by creating a disaster plan and deciding how you will communicate in an emergency.

Step 3: Organize disaster supplies in convenient locations.

Step 4: Minimize financial hardship by organizing important documents, strengthening your property, and considering insurance.

SURVIVE

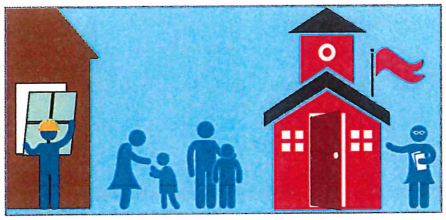
During the next big earthquake, and immediately after, is when your level of preparedness will make a difference in how you and others survive and can respond to emergencies:

Step 5: Drop, Cover, and Hold On when the earth shakes.

Step 6: Improve safety after earthquakes by evacuating if necessary, helping the injured, and preventing further injuries or damage.

RECOVER

After the immediate threat of the earthquake has passed, your level of preparedness will determine your quality of life in the weeks and months that follow:

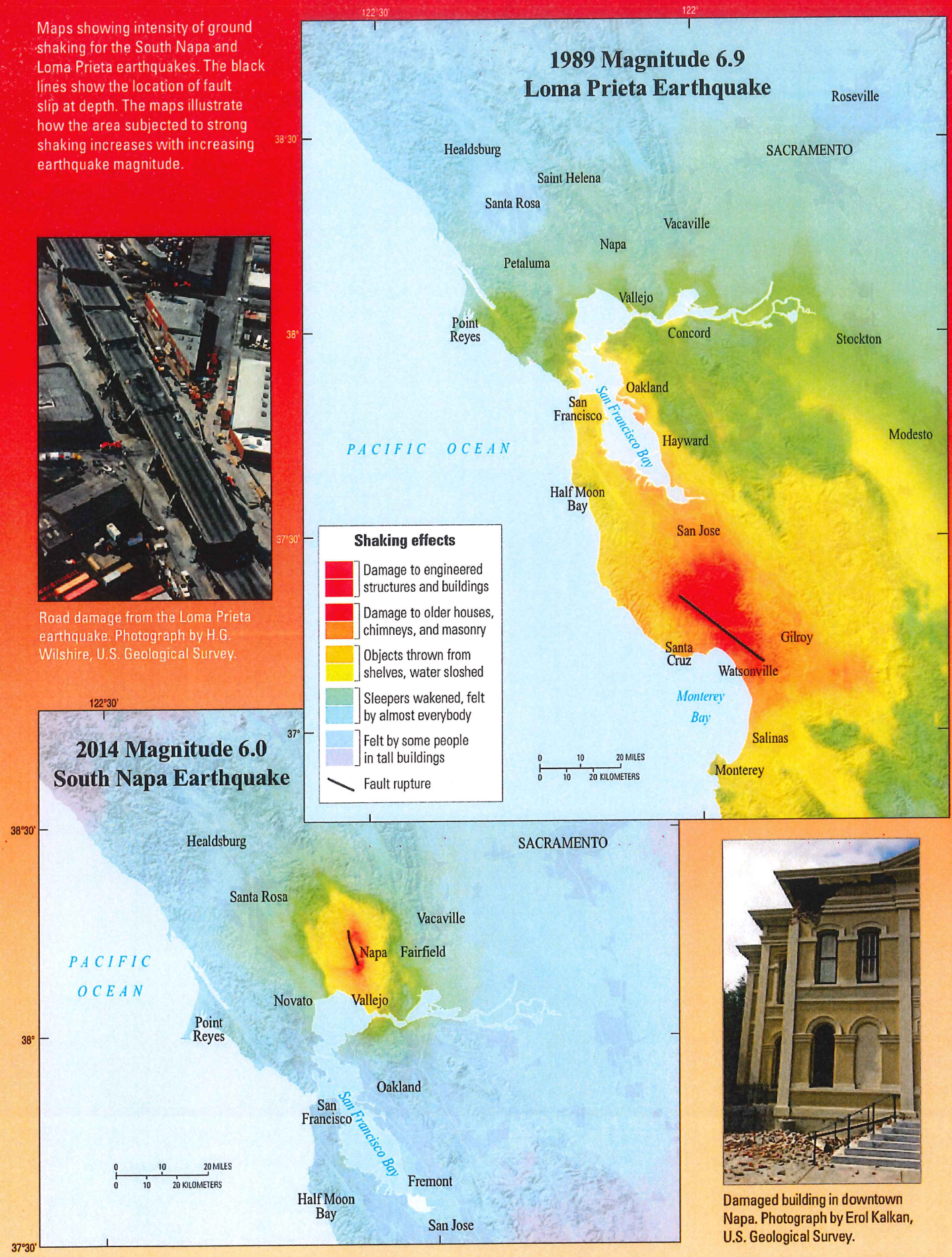


Step 7: Reconnect and Restore. Restore daily life by reconnecting with others, repairing damage, and rebuilding community.

Adapted from Seven Steps To Earthquake Safety
http://earthquakecountry.org/sevensteps/

Maps showing intensity of ground shaking for the South Napa and Loma Prieta earthquakes. The black lines show the location of fault slip at depth. The maps illustrate how the area subjected to strong shaking increases with increasing earthquake magnitude.

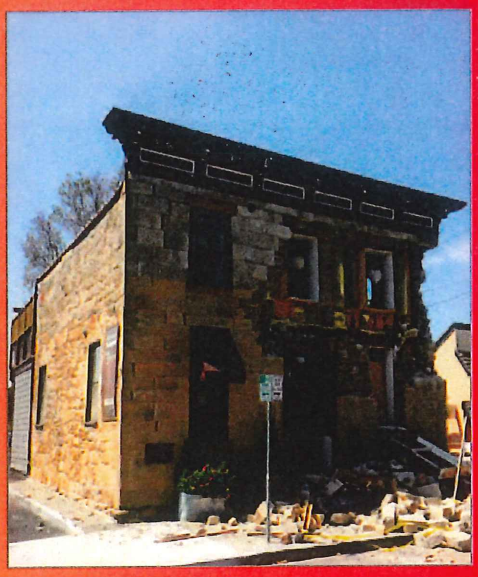
Road damage from the Loma Prieta earthquake. Photograph by H.G. Wilshire, U.S. Geological Survey.



Damaged building in downtown Napa. Photograph by Erol Kalkan, U.S. Geological Survey.

Additional Earthquake Resources

American Red Cross – Bay Area (http://www.redcross.org/local/northern-california-coastal)
Association of Bay Area Governments (http://resilience.abag.ca.gov/earthquakes/)
Bay Area Earthquake Alliance (http://bayquakealliance.org/)
California Earthquake Authority (http://www.californiarocks.com/)
California Geological Survey (http://www.consrv.ca.gov/cgs/geologic_hazards/earthquakes)
Did You Feel It? (http://earthquake.usgs.gov/earthquakes/dyfi/)
Earthquake Country Alliance (http://earthquakecountry.org/)
Putting Down Roots in Earthquake Country (http://pubs.usgs.gov/gip/2005/15/)
ShakeAlert – An Earthquake Early Warning System for the United States West Coast (http://pubs.usgs.gov/fs/2014/3083/)
ShakeMap (http://www.cisn.org/shakemap/nc/shake/index.html)
ShakeOut.org (http://www.shakeout.org/california/bayarea/)
Uniform California Earthquake Rupture Fault version 3 Fact Sheet (http://pubs.usgs.gov/fs/2015/3009/)
United Policyholders (http://www.uphelp.org/)
USGS Real-Time Earthquakes (http://earthquake.usgs.gov/earthquakes/map/)



Damaged building in downtown Napa. Photograph by Erol Kalkan, U.S. Geological Survey.

(continued from page 5) however, an earthquake of magnitude 6.7 or larger will cause strong shaking over a broad area. Therefore, it is important to estimate the probability of a large earthquake occurring anywhere in the San Francisco Bay region.

What is the Likelihood That an Earthquake Will Affect You?

Earthquake probabilities are only one component in the evaluation of earthquake hazards. Higher magnitude earthquakes have broader areas of intense shaking and cause more damage than lower magnitude earthquakes. In a magnitude 6.0 earthquake, strong shaking and damage are confined to a localized area, as illustrated by the 2014 South Napa earthquake. In comparison, the 1989 magnitude 6.9 Loma Prieta earthquake caused damage over a region nearly 100 miles long. Local soil and geologic conditions, bedrock type, quality of building construction, and susceptibility to flooding (caused by dam or levee failure) can also affect the amount of damage at a particular site. This was dramatically demonstrated by the 1989 Loma Prieta earthquake, which devastated vulnerable parts of Oakland and San Francisco, more than 50 miles from the fault rupture.

How Can You Protect Yourself and Your Family?

Taking simple steps before and during earthquakes can help protect you and your family, as well as speed your recovery from an earthquake.

Before the next earthquake:

- Assess your home and work space, identify hazards, and secure moveable items.
- Create an emergency plan and organize disaster supplies to sustain you and your family for 72 hours or longer.
- Practice "Drop, Cover, and Hold On" to protect yourself when the ground begins to shake. Learn and practice what to do at home, work, or in school.
- Stay prepared by repeating these steps on a regular basis. For example, reassess your preparedness every year and participate in the annual Great California ShakeOut drill on the third Thursday in October.

Lack of adequate shear walls on the garage level exacerbated damage to this building at the corner of Beach and Divisadero in the Marina District, San Francisco, during the October 1989 Loma Prieta earthquake.

Brad T. Aagaard, James Luke Blair, John Boatwright, Susan H. Garcia Ruth A. Harris, Andrew J. Michael, David P. Schwartz, and Jeanne S. DiLeo

Edited by *Kate Jacques* and *Carolyn Donlin*

For more information contact:
1-888-ASK-USGS
(1-888-275-8747)

http://earthquake.usgs.gov/
http://ask.usgs.gov

https://www.facebook.com/USGeologicalSurvey

https://twitter.com/USGS

ISSN 2327-6916 (print) ISSN 2327-6932 (online)
http://dx.doi.org/10.3133/fs20163020

From: LOIS BATTUELLO
To: Hawkes, Trevor
Subject: The Inn at the Abbey - instructions re: map from Mike Oskin
Date: Saturday, August 15, 2020 3:57:46 PM

[External Email - Use Caution]

Hi Trevor. I think this may help you find the project site. Calistoga. To view the confluence of a reverse fault with the West Napa Fault at Lodi Lane, please refer to the black and white map on the left labelled Mike Oskin and 6.0 M. Spot the star for St. Helena. Now spot the top point of the star that has a dot. Then move to the left to the next dot. That dot it at Lodi Lane and Hwy. 29, about 25% of the distance to Calistoga. At the dot you will see two lines that make a loop. Where they begin is roughly at the convergence on Lodi Lane. Mike also studied the Bale Grist Mill and developed a report and referred to the mill as Napa Grist Mill. He has removed it from online as he has not had the time to finalize the report since after our May 2016 meetings, he was promoted to Chairman of the Department of Geology. None the less, the massive wheel of the Grist Mil is on the West Napa Fault's escarpment in that district. The mill would not have been possible without the escarpment as the wheel is much wider in diameter than the building is tall. This marked the best location for a water-powered mill in the valley. If you didn't receive the materials, please let me know and I will run another set down to you Monday.

From: Bordona, Brian
To: Gallina, Charlene; Hawkes, Trevor
Subject: FW: Hotel project on Lodi Lane at Hwy. 29 ... earthquake fault lines per USGS and CSG
Date: Tuesday, March 3, 2020 1:58:35 PM

From: Morrison, David <David.Morrison@countyofnapa.org>
Sent: Tuesday, March 3, 2020 10:12 AM
To: Bordona, Brian <Brian.Bordona@countyofnapa.org>; Anderson, Laura <Laura.Anderson@countyofnapa.org>
Subject: RE: Hotel project on Lodi Lane at Hwy. 29 ... earthquake fault lines per USGS and CSG

FYI

From: LOIS BATTUELLO <loisbatt@comcast.net>
Sent: Tuesday, March 3, 2020 9:06 AM
To: Morrison, David <David.Morrison@countyofnapa.org>
Subject: Hotel project on Lodi Lane at Hwy. 29 ... earthquake fault lines per USGS and CSG

Dear David,

This is a note to alert you that a proposed hotel for the location noted above sits only yards from the main West Napa Fault and is also a location for a reverse fault that runs under a number of small knolls that are visible from Ehlers Lane. In fact the U.S. Geological Survey dug a research pit off Ehlers Lane to study this smaller fault. In addition, I squired USGS's research geologlist, Belle Philabosian and UC Davis Geology Dept. Chairman Prof Mike Oskin to various potential sites for more pits along Hwy. 29 and in south St. Helena. Mike has a report online noting the wheel of the Bale Grist Mill sits on the West Napa Fault escarpment. The escarpment was convenient, as the wheel is longer in diameter than the height of the mill itself. Mike pointed out that the fault line runs directly along the "west" (south) side of Hwy. 29, and crosses the lower portion of the Culinary Institute's parking lot, and from there, the building that runs parallel to York at Creek (at the Tree Tunnel next to the Beringer Rhine House) as part of Las Alcobas is actually built over the top of the West Napa Fault.

We now have a couple of maps that show the fault lines and I will send them to you. Our problem is the state's laws are geared to address the Alquist-Priolo Maps with which you are now familiar since the 2014 Napa Earthquake. And there are no Alquist-Priolo Maps for the St. Helena or Calistoga quadrants. Our communities are simply too small to rate any priority treatment. The question is what to do about the problem posed by the Jackson family project for Lodi Lane at Hwy. 29, lacking an Alquiest-Priolo map, but with full knowledge of the fault system. The average Geotechnical expert for projects in our area have basically searched the Alquist-Priolo maps and found none for St. Helena, for example, and have written that the area is not seismically active. Even our General Plan is being changed to recognize that it is.

Because of my work in national security, I won't be able to "bird-dog" the Jackson family project. I am wondering, however, if you feel you have adequate resources and knowledge outside of Alquist Priolo to intervene early on ... or to have the County itself hire an expert in Seismology and and Active Fault Geology. It is all too easy for someone who wants to build to "buy" an expert to come up with findings that say "all is well." You weren't here at the time of the Carneros Inn project, but the project's "water expert" was exposed as having no license and basically being an actor from Hollywood.

It would be a shame to see the site developed (a huge eyesore as to get 79 rooms they have to be multistory at that site, smaller than the Red Hen which is a non-intrusive redevelopment project. This thing would appear as the Emerald City arising from nowhere to forever alter views from Hwy. 29 ... just looming above everything much the way the out-sized hotel building of the Four Seasons project on Silverado Trail dominates the area and obstructs views, unlike its neighbor, Solage, which is single story and discreet so views of the hills are uninterrupted. Aside from all of this, we are talking PUBLIC SAFETY, as models for a break in the Hayward Fault for a 7.0 quake put the West Napa Fault at transmitting more than an 8.0 jolt due to liquefaction. The Four Seasons was not built with what the State recommends as a foundation for seismic mitigation ... there are no cross-braces between uprights and each upright sits on an independent cement deck similar to those poured for wind machines ... and they are more than 20 feet apart ... a rolling quake would knock them out of commission which causes the cement floors and walls to pancake. I've seen a hotel in Mexico of the same style that pancaked and killed dozens of people in San Patricia (Malaque), Jalisco, Mexico, due to liquefaction while the quake itself was asea and measured 5..7M.

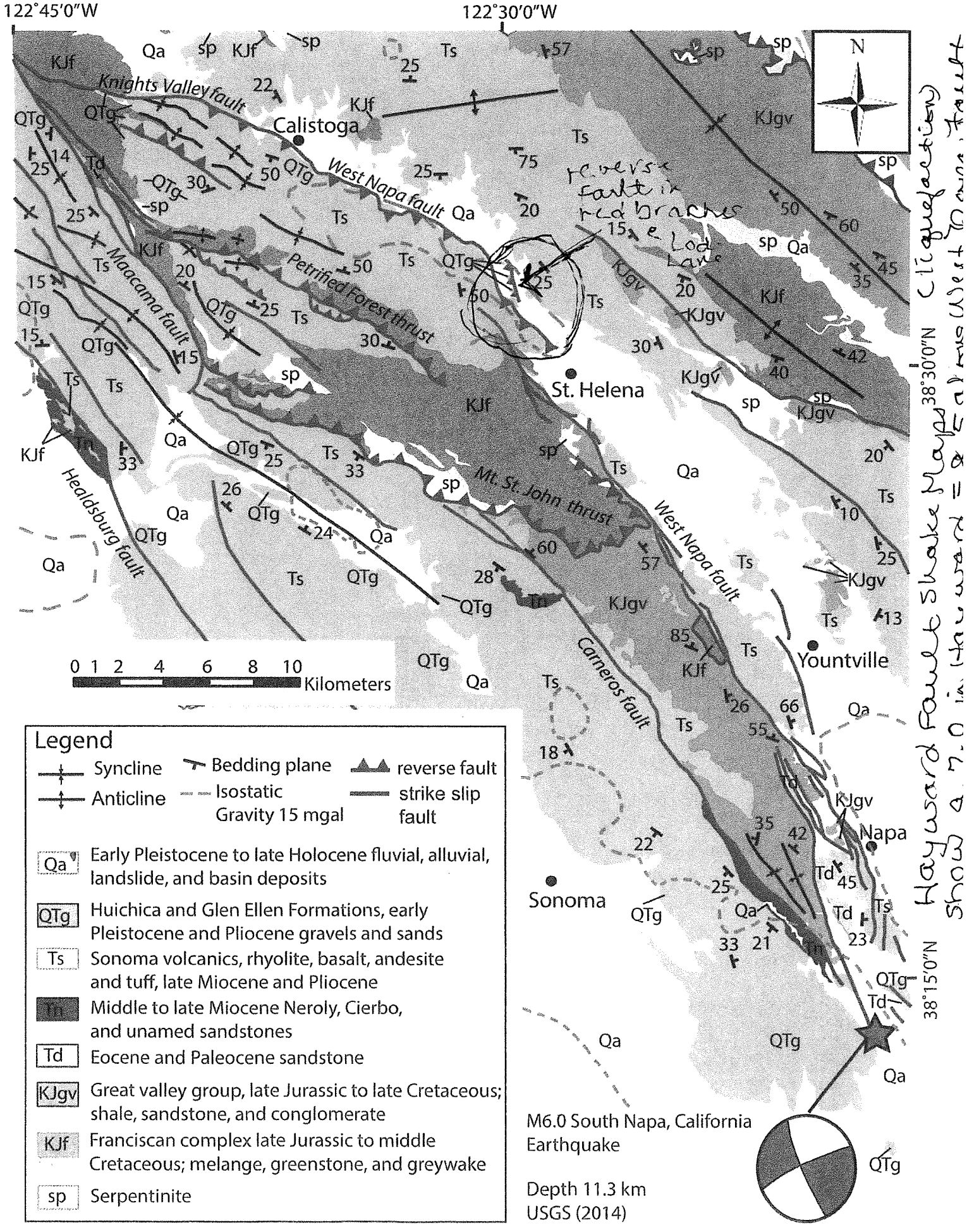
So, David, can the county perhaps protect itself against the liability of a project like this by advising early on of the fault line that makes the site unsuitable for commercial development?

Please give me your thoughts on this. Prof Oskin would probably deliver an opinion about the site if you wish.

Keep care and I'll send maps to you later this week. I hope all is going well. I certainly appreciate your service to the county.

Sincerely,

Lois Ann Battuello
1634 Main Street
St. Helena, CA 94574



reverse faults in red branches

Hayward fault shake Maps
Cliquefaction
show a 7.0 in the west Napa fault

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 27, 2020

Trevor Hawkes
County of Napa
1195 Third Street, Suite 210
Napa, CA 94559

RECEIVED

AUG 03 2020

Napa County Planning, Building & Environmental Services

Re: 2020079021, Inn at the Abbey Project, Napa County

Dear Mr. Hawkes:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

a. If part or all of the APE has been previously surveyed for cultural resources.

b. If any known cultural resources have already been recorded on or adjacent to the APE.

c. If the probability is low, moderate, or high that cultural resources are located in the APE.

d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

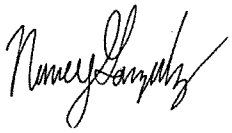
b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

From: Charles Shinnamon
To: Hawkes, Trevor
Cc: "Teresa Zimny"
Subject: RE: Inn at the Abbey
Date: Friday, May 8, 2020 11:01:21 AM
Attachments: Draft Lodging Market Study 2018.pdf

Trevor,

Thanks for your email. As I had noted, we are members of the Napa Housing Coalition and we are deeply concerned that new hotels drive the need for substantial numbers of new housing units, especially those in the 'affordable' range (under 80% of AMI). We think that an appropriate housing impact study should be included in the EIR.

There are two recent studies done related to hotels within the City of Napa. We fully expect that housing impacts will be quite similar. We have enclosed the 2018 Draft Lodging Market Study that includes a detailed analysis prepared by BAE Urban Economics, which outlines the housing needs generated by hotels of various kinds. A second study was prepared by Economic Planning Systems for the EIR prepared in conjunction with the Trinitas Hotel Project, also in the City of Napa.

Please advise us as to the process of assuring that such a study will be included in the Scope of Work for the pending EIR.

Thank you for your consideration,

Chuck S

Charles W. Shinnamon, P.E.

chuckshinnamon@gmail.com

"If you don't like the news, go out and make some of your own." (Wes "Scoop" Nisker)

From: Hawkes, Trevor <trevor.hawkes@countyofnapa.org>
Sent: Friday, May 08, 2020 10:03 AM
To: Charles Shinnamon <chuckshinnamon@gmail.com>
Cc: Teresa Zimny <tzimny62@gmail.com>
Subject: RE: Inn at the Abbey

Hi Chuck,

Just checked and you are right the documents are older than the versions I have received most recently from the applicant. Let me get in touch with IT/GIS about updating the files and when that has been done I will let you know.

We are in the early stages of an EIR for this project. It is not 'in process' yet as we are hammering out the details of the scope of work but I think in the very near future some of those items are going to

be decided upon. In my opinion we are a long ways from a hearing on the potential EIR.

From: Charles Shinnamon <chuckshinnamon@gmail.com>
Sent: Thursday, May 7, 2020 1:56 PM
To: Hawkes, Trevor <trevor.hawkes@countyofnapa.org>
Cc: Teresa Zimny <tzimny62@gmail.com>
Subject: Inn at the Abbey

Mr. Hawkes,

Can you please give me a status report for the Inn at the Abbey? I have read the documents available on your website; all of those are over a year old. Are there new documents available for review? Is an EIR in process? Or, it there a proposed Mit. Neg. Dec.? What do you foresee as the timing for coming to hearing?

Thanks for your consideration,

Chuck Shinnamon
Napa Housing Coalition

Charles W. Shinnamon, P.E.

chuckshinnamon@gmail.com

"If you don't like the news, go out and make some of your own." (Wes "Scoop" Nisker)

May 1, 2018

NAPA LODGING MARKET STUDY
ECONOMIC, FISCAL, AND LABOR/HOUSING IMPACT ANALYSES

PREPARED FOR THE CITY OF NAPA CITY COUNCIL

FOREWARD

In September 2017, Cushman & Wakefield was engaged by the City of Napa to perform a lodging market study that presents historical trends and projects future performance in the City of Napa. The study analyzes the lodging supply and demand by product category providing a timeline for the absorption of proposed projects in the pipeline, and a longer-term analysis of the market's capacity for supporting additional hotel rooms. This report examines changes in Napa's lodging market since the last study, conducted in 2007.

Concurrent with the Cushman & Wakefield study, BAE Urban Economics was engaged to study the impacts of the hotel sector on the local economy and the city's revenues, as well as the ability to attract hospitality workers. Using the findings related to hotel development and performance in the Cushman & Wakefield report, BAE projected the spinoff economic impacts and new jobs created by the additional lodging. BAE also projected sales taxes, property taxes, and transient occupancy taxes (TOT), and other revenues related to new hotel development that contribute to the city's General Fund. Finally, BAE evaluated the need and availability of housing for the new hotel workers needed to support the additional hotel demand identified by Cushman & Wakefield.

The Napa Valley is a premier visitor destination, and lodging market activity is constantly evolving. This report takes into consideration the various issues currently facing the Napa and Napa Valley hotel market at the time of this study; however, as with any study, unforeseen events or circumstances can impact hotel supply and demand and may produce results that could affect the forecasts and recommendations.

CUSHMAN & WAKEFIELD WESTERN, INC. **BAE URBAN ECONOMICS**

Napa Valley Lodging Market Study

Prepared For:

City of Napa
Community Development Department
1600 First Street/PO Box 660
Napa CA 94559-0660

Prepared By:

Cushman & Wakefield Western, Inc.
Valuation & Advisory
49 Stevenson Street, 4th Floor
San Francisco, California 94105
C&W File ID: 18-38002-900003

Cushman & Wakefield Western, Inc.
49 Stevenson Street, 4th Floor
San Francisco, California 94105
cushmanwakefield.com

March 14, 2018

Mr. Rick Tooker
City of Napa
Community Development Director
Community Development Department
1600 First Street/PO Box 660
Napa CA 93899

Re:
Napa Valley Lodging Study
Napa Valley, Napa County, California

C&W File ID: 18-38002-900003

CLIENT ID#: C2017 294

Dear Mr. Tooker:

The City of Napa has engaged Cushman & Wakefield Western, Inc. ("C&W) to prepare a hotel market supply and demand study for the city and county of Napa, California, for economic planning purposes. For this assignment, C&W researched and inventoried hotels, motels, inns, bed-and-breakfast facilities, and banquet and meeting space facilities in the city and county of Napa. New lodging and meeting facilities proposed for the area were also evaluated. Primary research was conducted by administering questionnaires; interviewing area operators, government officials, and representatives of tourist organizations and attractions; and through a review of planning records. The operating performance of existing hotels and meeting facilities was also evaluated.

Based on the data collected and information from our in-house files, we have classified the existing and proposed lodging supply into four categories: 1) bed-and- breakfast facilities, 2) limited-service hotels and inns, 3) full-service hotels, and 4) independent and boutique hotels. Considering the current and proposed hotel inventory in the city and county of Napa, lodging supply and demand analyses were prepared; these culminated in the preparation of forecasts of occupancy and average rate for the four categories. Meeting and banquet space in hotels and other venues was analyzed to consider its relevance to hotel demand. Finally, topical issues affecting hotel development and future lodging and meeting demand in the city and county of Napa were investigated.

The market study report contained herein concludes with our recommendations for future hotel development within the city of Napa. Our consulting report was prepared in accordance with the Uniform Standards of Professional Appraisal Practice (USPAP), as provided by the Appraisal Foundation.

The analysis contained in this market study is based upon assumptions and estimates that are subject to uncertainty and variation. These estimates are often based on data obtained in interviews with third parties, and such data are not always completely reliable. In addition, we make assumptions as to the future behavior of consumers and the general economy, which are highly uncertain. However, it is inevitable that some assumptions will not materialize and unanticipated events may occur that will cause actual achieved operating results to differ from the financial analyses contained in this report and these differences may be material. Therefore, while our analysis was

conscientiously prepared on the basis of our experience and the data available, we make no warranty that the conclusions presented will, in fact, be achieved. Additionally, we have not been engaged to evaluate the effectiveness of management and we are not responsible for future marketing efforts and other management actions upon which actual results may depend.

We take no responsibility for any events, conditions, or circumstances affecting the market that exists subsequent to the last day of our fieldwork, January 1, 2018.

The opinions in this report are qualified by certain assumptions, limiting conditions, certifications, and definitions. We particularly call your attention to the extraordinary assumptions and hypothetical conditions listed below.

This letter is invalid detached from the report, which contains the text, exhibits, and Addenda.

Respectfully submitted,

CUSHMAN & WAKEFIELD WESTERN, INC.

Elaine Sahlins, MAI, CRE
Managing Director
State-Certified General Real Estate
Appraiser License No. AG002987
elaine.sahlins@cushwake.com
(415) 773-3531 Office Direct

Executive Summary

The following is an executive summary of the information that we present in more detail in the report.

Key Findings

- Demand for hotel rooms has been strong for all product segments and barring any unforeseen event, is expected to continue to grow over the long-term.
- In the past ten years, despite a large number of entitled hotel sites, only a small number of new projects have actually been built. New supply in the city of Napa in the past seven years has been fairly modest. The room Westin Verasa opened in 2008, the Andaz hotel opened in 2009, the Hampton Inn opened in 2016, and the Archer Hotel opened in 2017. Other hotel rooms in the city of Napa represent expansions or renovations of existing lodging. Note that the number in the chart below represent only the hotels that report to Smith Travel Research and different from the inventories used elsewhere in the analysis.

Historical Lodging Inventory - Number of Rooms as reporting to STR

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
American Canyon	248	0	101	0	0	0	0	0	0	0	0	349
Calistoga	667	0	0	0	0	0	0	0	0	0	0	667
Napa	1,832	180	141	0	0	165	0	41	-5	115	46	2,515
Rutherford	136	0	0	0	0	0	0	0	0	0	0	136
St. Helena	251	0	0	0	0	0	0	0	0	0	51	302
Yountville	298	0	82	0	0	0	0	0	0	0	0	380
Unincorporated	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,432	180	324	0	0	165	0	41	-5	115	97	4,349
Napa County												
Cummulative Totals	3,432	3,612	3,936	3,936	3,936	4,101	4,101	4,142	4,137	4,252	4,349	
Percent Change		5%	9%	0%	0%	4%	0%	1%	0%	3%	2%	
Cummulative Increase		5%	15%	15%	15%	19%	19%	21%	21%	24%	27%	
City of Napa	1,832	2,012	2,153	2,153	2,153	2,318	2,318	2,359	2,354	2,469	2,515	
Percent Change		10%	7%	0%	0%	8%	0%	2%	0%	5%	2%	
Cummulative Increase		10%	18%	18%	18%	27%	27%	29%	28%	35%	37%	
City as % of County		56%	55%	55%	55%	57%	57%	57%	57%	58%	58%	

Note 2017 new supply represent partial year openings

- The Napa Valley continues to be a seasonal destination, however, the number of peak nights has expanded and annual occupancy and rates are at very high levels. Since the 2007 HVS study, occupancy has rebounded but has been more stable in the last three years. Average rates soared from 2010 to 2015 and are still strong, though the rate growth has moderated. The fires in October 2017 significantly influenced the 4th Quarter and annual performance for last year. According to market participants, many hotels were on track for another record year until the fires. Hotels in the Napa Valley instead provided lodging for displaced residents, visitors, and first responders at courtesy rates. Since the fires, operators report uneven recovery of demand. Some properties continue to be negatively impacted while the performance of others is generally improved. The appraisal assumes that the impact from the fire is limited and demand returns to prior levels in 2018.
- The city of Napa has a large pipeline of proposed hotels, many of which are entitled. Some of the properties have been entitled for many years and only two new hotels and some expansions have opened in the last 7 years. Although a number of the proposed hotels are assumed to be built in the study, the reality of what gets developed and opened may differ from the projections. While not all the rooms may get built and the

timing of projects may differ from the assumptions used in the report, the analysis indicates that demand for hotel rooms will exceed the proposed supply in the long term. In the short term, the absorption of new rooms will likely transitionally impact hotel performance.

- Luxury hotels are the most complicated and expensive hotels to build. Because of the large investment, the properties require high average rates and occupancies to be feasible. There are no products in the city of Napa that are categorized as Luxury with rates that compete with the Up Valley Resorts so there is no evidence that this property type can be supported in the city. Generally luxury properties in the Napa Valley are small with high service levels. While we have included larger luxury proposed hotels in the analysis for the city of Napa, the feasibility of these projects may impact their actual development. Limited- and select-service hotels are less expensive to build. Branded limited- and select-service hotels benefit from sales, marketing, and reservation systems that can drive demand and facilitate a quick ramp-up.

- Consistent with the 2007 HVS study, the development of a core of downtown full- service hotels does not preclude the need for a range of additional lodging products in a variety of locations throughout the city and county. In recent years, hotel development in the city has been more achievable than in other areas of the county. Strong demand exists for additional limited-service, full-service, and resort accommodations and the pricing ranges due to seasonal and locational attributes of particular properties are important to maintain to continue to make the destination accessible for all hotel guests.

- Hotel products are changing with the shifts in demographics of visitors. Upscale hostels, wellness retreats, and lodging with communal public spaces and orientation to group activities are successfully being developed in other resort destinations. We also recommend that a wide variety of lodging products be considered for the market beyond the conventional categories considered in this study. The range of hotel products, brands, and locations, and also serve to expand the base of lodging demand by offering a number of unique guest experiences.

- While a core of downtown hotels would contribute to the overall success of the area, not all new hotels have to be built downtown. Some properties may be more feasibly developed on sites outside of the core.

- The entitlement and development process for new hotels in Napa, along with the cyclical nature of the industry, has resulted in some hotel construction being delayed, sometimes for years. It may be that by the time the market would support construction, the optimal facility programing for the site may differ from what was approved. Adjusting the entitlements could then further delay or hamper the project. The consultants recommend that additional flexibility be incorporated into the approval process.

Objective of the Market Study

The objective of the assignment is to evaluate supply and demand conditions for lodging and meeting facilities in the city and county of Napa. Note that the study refers to the Napa Valley and Napa County as synonymous designations for the geography considered in the analysis. Major tasks in the scope of work included:

1. Preparing an inventory of existing and proposed lodging facilities;
2. Developing definitions for different lodging products;
3. Reviewing demand generators for lodging demand in the Napa Valley;
4. Forecasting occupancy and average rate and potential capacity by lodging product type;
5. Reviewing the available meeting and banquet facilities;
6. Making recommendations for future lodging and meeting space development; and
7. Discussing hotel development issues and constraints.

Cushman & Wakefield was engaged by the City of Napa's Community Development Department to provide a market study of the lodging performance in the city and county of Napa. In 2000 and 2007, similar studies were performed by HVS. We have been provided with a copy of the 2007 HVS study and asked to discuss notable differences between our findings and those of HVS. Our references to the 2007 HVS study are not intended as commentary or review; but serve to state different assumptions and findings between the two periods in time. These relevant differences in the content of this study and the 2007 HVS study are noted throughout the report.

The hotel market has seen many changes since the 2007 study including the completion of major components of the flood control project in the city of Napa, the opening of new hotels, the earthquake in 2014, and more recently, the fires in 2017. Lodging performance has set records since 2010 and operators anticipate continued improvement. In this environment, just as when the 2007 HVS Market Study was underway, additional hotels are being proposed for sites in the city and county of Napa. As with hotel development in general, particularly in areas with stringent development challenges, the specifics and timing of the projects are subject to change. Unlike the market conditions at the time of the 2007 HVS study, which was prepared as the market cycle was subsiding, hotel performance since 2010 has improved, and new hotel projects open since 2007 have been readily absorbed. As expected in the earlier study, the majority of the new hotel rooms in the Napa Valley have been built within the city of Napa.

It is important to note that while the Napa lodging market is very fragmented and much of the inventory is independently owned and operated, national investors are more present in the market than in the prior study and the area is seeing additional hotel development that is affiliated with national and global brands. This study considers a number of specific lodging projects in the development pipeline, however, their actual construction may or may not occur. The actual completion of new hotels may be significantly different from the data presented in the report and the forecasts and findings of this study may be impacted by future economic trends.

The forecasts in this study are projected for the next ten years based on the known pipeline of new rooms for years 1 through 6 and the sustainable occupancy for years 7 through 10. These projections result in residual or potential demand in each year and are intended to demonstrate the overall general absorption of the current pipeline of hotel projects and to mark the timing when additional new hotels could be considered.

Although the study takes into consideration the various issues currently facing the Napa Valley at the time of this writing, as with any study, unforeseen events can impact hotel supply and demand that may produce results that could affect the forecasts and recommendations.

Intended Use of the Study

This study is being prepared for use by the City of Napa Community Development Department for economic-planning purposes. This report or any information, analysis, or conclusions presented in this report should not be disseminated to or relied upon by the public or third parties without the express written consent of Cushman & Wakefield.

Summary of Findings

1. Our research indicates that Napa Valley contains 135 lodging properties with 5,074 guestrooms. On average this implies an average room count of 44 units; in reality, approximately 60 percent of the properties have 20 rooms or fewer, with an average of 7.5 units. Almost all of these smaller properties are independently owned and operated – most as bed and breakfasts. Conversely only 17 properties have 90 guestrooms or more. These 17 properties include the majority of branded hotels and most are located in the city of Napa. The inventory of lodging facilities in Napa Valley can be considered a highly decentralized market comprised of many individual owners and operators, each with their own business strategies and

objectives. The fragmented nature of the lodging market means that performance expectations and operating and marketing practices differ from property to property.

2. In addition to the range of property types and owners and operators, the inventory is scattered in a variety of locations. Over the past four to five decades (and for some locations longer), four major destinations have evolved: Calistoga, St. Helena, Yountville, and the city of Napa. Other secondary locations are also supporting improved lodging performance. Since the 2007 HVS Study, the aforementioned destinations have each evolved with an increase in hotel rooms and complementary retail, food and beverage, and entertainment uses including tasting rooms and wineries. These locations have become more distinctive destinations over the past 10 years. It is our opinion that visitors to the Napa Valley are more sophisticated about their lodging choices, however, lodging continues to sell out during peak periods and selection of lodging can be based on availability and price.

3. Lodging inventory has markedly increased since the 2007 HVS Study. The following chart summarizes the inventory identified for this study compared to the 2007 report. Some of the differences are the result of different categorization of particular properties among the categories, largely based on estimated average rates and facilities. For example, the full-service hotels in downtown Napa have all been categorized in the full-service category. Some small inns in the city were included in the B&B and Small Inns category and may have been considered luxury in the 2007 HVS study. We have not designated any hotels as luxury in the city. The luxury hotels Up Valley support an average rate exceeding $600 which is higher than the estimated rates achieved at the existing inventory. All in all, there are more rooms and the reclassification of the hotels into the four categories reflects the expansion of the different property types.

Napa Valley Existing Lodging Supply

	Current Inventory				Inventory from the 2007 Study			
Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	75	60%	675	13%	93	62%	503	10%
Limited Service Hotels	27	22%	1,521	30%	17	11%	1,068	21%
Full Service Hotel	11	9%	1,907	38%	6	4%	1,193	24%
Luxury Hotels & Resorts	12	10%	972	19%	33	22%	1,215	24%
Totals	125	100%	5,074	100%	149	100%	3,979	78%

4. Overall, the number of available rooms is 28 percent greater than in 2007. As was anticipated in the 2007 study, the majority of the hotels that opened are located in the city of Napa and have contributed to the evolution of the city as a distinct lodging destination.

   Below is the allocation of lodging inventory for the county and city of Napa.

Napa Valley Existing Lodging Supply - as of December 2017				
Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	75	60%	675	13%
Limited Service Hotels	27	22%	1,521	30%
Full Service Hotel	11	9%	1,907	38%
Luxury Hotels & Resorts	12	10%	972	19%
Totals	125	100%	5,074	100%

City of Napa Existing Lodging Supply -as of December 2017				
Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	23	51%	251	10%
Limited Service Hotels	13	29%	731	30%
Full Service Hotel	9	20%	1,435	59%
Luxury Hotels & Resorts	0	0%	-	0%
Totals	45	100%	2,417	100%

Distribution of Lodging Inventory - as of December 2017		
City of Napa as a ratio of Napa Valley		
Property Type	Number of Properties	Number of Guestrooms
Bed and Breakfast	31%	37%
Limited Service Hotels	48%	48%
Full Service Hotel	82%	75%
Independent and Luxury Hotels	0%	0%
Totals	36%	48%

Note that Bed and Breakfast and Small Inns range from 2 to approximately 40 rooms. Limited service hotel range from 15 to 115 rooms and as a group are lower rated than the B&B and Small Inns. Full service hotels range in size from 80 to 370 rooms. Luxury hotels and resorts include properties that are 50 to 115 rooms.

5. The most notable growth in inventory has been in the full-service segment with the openings of The Andaz Hotel, The Westin Verasa Hotel, The Meritage Resort, and most recently The Archer Hotel. The Napa Valley offers a wider range of lodging types than ever before and average rates in 2017 ranged from a low of $192.00 for the limited service category to over $600.00 for the independent and luxury hotels. On a nightly basis, the range can be even greater – from approximately $100 to over $2,000 depending on the property type and season. A number of factors have been considered when determining the category each property but most notably rate positioning and facilities.

Note that in the current study, we have not included any existing hotels in the city of Napa in the Luxury Hotels and Resorts category although we have included proposed supply in this category. This category was evaluated only for the county as a whole.

6. While Napa is supporting a growing hotel market, the inventory of existing lodging is relatively small. The number and type of operating properties limits the analysis to considering the market based on two geographical categories: lodging in the Napa Valley and in the City of Napa. In this study, the Valley reference is synonymous to the County. The study does not provide for smaller geographical analysis as the lodging inventory in the city and the county is not expansive enough to allow for reasonable findings from the analyses. The study is intended to provide insight on overall market performance, not to opine on the feasibility of particular projects or submarkets.

7. Meeting and banquet space in the Napa Valley is mostly contained in the full service and luxury hotels, and is inexorably linked to hotel room availability. Meeting and group activity is an important driver of hotel demand during slower periods as operators seek out groups to fill rooms, typically at lower room rates. As the peak season for transient demand in the market has expanded and overall group demand nationally has declined, the importance of meeting and group facilities for many of the smaller properties has diminished. Even the full-service hotels, including those affiliated with global hotel companies, are extremely sophisticated and judicious in their accommodation of groups so as to maximize rate and occupancy. The larger hotels in the current pipeline are planned with a complement of meeting space that is important for those projects. Smaller and limited service hotels are not as reliant on meeting and group demand. It is our opinion that additional meeting and group space will be beneficial for the larger hotels and resorts proposed in the market, particularly those not affiliated with global brands. The trends over the past 20 years have shown that the appeal of meeting space is more important to larger hotels and during softer economic periods.

8. The importance of brands for a number of the existing and proposed hotels cannot be overstated. This is not to imply that all hotels should be branded. The Napa Valley is expected to continue to benefit from a wide range of lodging which adds to the attraction of the destination. However, those properties opening with globally affiliated brands and distribution networks are able to quickly ramp up. In addition, the Napa Valley is a prime destination for redemptions of brand loyalty program points. It is our opinion that brand affiliations have the ability to expand demand for particular hotels and to grow the market.

9. Since the 2007 study, the availability of online booking engines has exploded. Consumer use of the internet for researching and making reservations has changed the marketing and reservation practices of hotels. Independent hotels are also benefactors of this evolution as having an online presence is efficient and effective to secure bookings for all categories of lodging. It is our opinion that the strong performance of the B&B category is directly related to greater online presence and the newly found ease of making reservations for these properties.

10. The pipeline of proposed hotels for the city and county of Napa continues to be a constantly changing inventory. Some of the proposed properties and sites discussed in the 2007 HVS study are still speculative ten years later. And those projects in the pipeline of the current report may end up being developed with alternative lodging products, different facilities and configurations, or not at all. Other sites that are not referenced in this document may ultimately be used for lodging facilities. The actual opening dates are always subject to change. The availability of specific sites, the securing of entitlements, and construction financing are material components of hotel development. This study assumes that the proposed pipeline of hotels considered as new supply in this analysis comes to fruition however, the future market performance may be significantly impacted based on what is actually built.

11. Demand for hotel rooms by transient and group hotel guests in the city and county of Napa is strong and barring any unforeseen event, is anticipated to continue to grow. The study analyzes the impact of new hotels in the two markets (City and County) assuming that a majority of the proposed hotel rooms in the pipeline are actually built. New hotels typically require an occupancy and rate ramp period and their performance is expected to improve over time. Existing hotels in the market can be transitionally impacted when new hotels open.

12. The study assumes that a number of hotels will open in the near term during the next five years. Through this period, the demand is not forecast to keep up with supply. This is represented by some years of negative supply numbers when there are more hotel rooms than guests to fill them. In these transitional years, the performance of existing hotels could be negatively affected. This is a short term proposition where the negative numbers in the analysis represent the years when the new hotels are being absorbed. The net result (conclusion) is that over the long-term, the current pipeline of proposed hotels could get built and absorbed. In the long term, the growing demand would then support additional hotel rooms. That is when the positive numbers represent excess or unsatisfied demand.

13. During periods when negative supply is indicated, it is likely that occupancy and rate will be impacted by new supply absorption. The positive numbers in the later years are not meant to be literally the number of rooms that should be built but indicate that there is more demand than supply.

14. As was noted in the 2007 HVS study, the performance of the current and proposed supply will always be subject to each property's specific management. Differences in operational experience, labor capacity, marketing strategies, and brand benefits can result in a wide range of achieved occupancies and rates. This analysis assumes that the existing and proposed lodging facilities are competently managed and maximize their operating potential.

15. The city and county of Napa are not immune from the problems of labor, traffic, and housing that are challenging throughout the San Francisco Bay Area. Traffic congestion is still a major concern among residents and visitors and can negatively affect the visitor's experience. The availability of employees to fill service level and managerial positions is a consistent anxiety of hotel operators and is impacted by the cost of housing in the area relative to the pay scale for hotel employees. These issues are expected to continue to be challenging for operators but do not appear to have deterred the development of new hotels, the interest of hotel developers, and the successful operations of existing lodging.

Forecasts of Rate and Occupancy and Lodging Capacity

Based on our research and analysis, forecasts of rate and occupancy and potential for additional development were prepared for each of the four lodging product categories for both the county of Napa as a whole and for the city of Napa. These forecasts assume a level of variability of approximately 3.0 to 5.0 percent on either side of the projections. The operating and marketing efforts of hotel operators are directly related to the success of any particular property and the market as a whole. The projections assume that some of the demand for new hotels will be effectively induced and managed to maximize performance. The forecasts also assume that the general economic trends in the market continue for the foreseeable future and that, like the lodging market's recovery from the 2014 earthquake, the impact of the recent fires on the hotel market is short-lived. Any changes in these conditions will alter the outcome of our forecasts and corresponding future hotel development recommendations.

Is it also important to note that the potential demand findings are not meant to be a recommendation of absolute numbers of hotel rooms that should be approved or developed. The negative numbers in the projections of potential demand represent the absorption of the pipeline of proposed lodging and the positive numbers mark the anticipated point in time when demand is expected to be strong enough to support additional hotel rooms. As the positive

numbers occur at least five to seven years from the start of the projections, the specifics of proposed lodging at that time are purely speculative.

Below are the forecasts for each of the four categories and the potential demand. The charts include the projections for the county of Napa and then for the city of Napa.

Bed and Breakfasts and Small Inns – Napa Valley

Projected Rooms Revenue - Napa Bed and Breakfast Sector - Napa Valley CA										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	675	675	675	675	675	675	675	675	675	675
Occupancy	69%	69%	68%	67%	68%	68%	68%	68%	68%	68%
Occupied Rooms	170,841	169,799	167,294	165,324	166,977	167,535	167,535	167,535	167,535	167,535
Average Rate	$351.52	$365.58	$380.21	$391.61	$403.36	$415.46	$427.93	$440.77	$453.99	$467.61
RevPAR	$242.55	$252.25	$258.54	$262.38	$274.29	$282.52	$290.99	$299.72	$308.71	$317.97
Rooms Revenue	$60,055,000	$62,076,000	$63,607,000	$64,743,000	$67,352,000	$69,605,000	$71,693,000	$73,844,000	$76,059,000	$78,341,000

Bed & Breakfast and Small Inns - Estimate of Additional Capacity - Napa County											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	675	684	706	743	778	778	778	778	778	778	778
Estimated Available Annual Room Nights	246,375	249,478	257,690	271,195	283,970	283,970	283,970	283,970	283,970	283,970	283,970
Total Projected Potential Demand	170,215	172,992	177,597	184,147	190,551	192,456	194,381	196,325	198,288	200,271	202,274
Estimated Sustainable Annual Occupancy	69%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
Estimated Sustainable Annual Demand		169,645	175,229	184,413	193,100	193,100	193,100	193,100	193,100	193,100	193,100
Total Projected Potential Demand		172,992	177,597	184,147	190,551	192,456	194,381	196,325	198,288	200,271	202,274
less Est. Sustainable Annual Demand		169,645	175,229	184,413	193,100	193,100	193,100	193,100	193,100	193,100	193,100
Unsatisfied Annual Demand		3,348	2,368	(265)	(2,549)	(644)	1,281	3,225	5,188	7,171	9,174
Cumulative Potential Supply Expansion		**9**	**6**	**(1)**	**(7)**	**(2)**	**4**	**9**	**14**	**20**	**25**

Bed and Breakfasts and Small Inns – City of Napa

B&Bs and Small Inns - City of Napa -Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	260	282	319	354	354	354	354	354	354	354
Occupancy	65%	65%	63%	63%	65%	64%	64%	64%	64%	64%
Occupied Rooms	61,665	66,508	73,688	80,951	83,380	82,694	82,694	82,694	82,694	82,694
Averate Room Rate	$297.43	$311.65	$327.42	$339.81	$350.00	$360.50	$371.32	$382.46	$393.94	$405.75
RevPAR	$193.27	$201.37	$207.22	$212.90	$225.86	$230.72	$237.64	$244.77	$252.12	$259.68
Rooms Revenue	$18,340,950	$20,727,074	$24,127,289	$27,508,216	$29,183,280	$29,811,698	$30,705,849	$31,627,345	$32,576,435	$33,553,378

B&B Estimate of Additional Capacity - City of Napa											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	251	260	282	319	354	354	354	354	354	354	354
Estimated Available Annual Room Nights	91,615	94,900	102,930	116,435	129,210	129,210	129,210	129,210	129,210	129,210	129,210
Total Projected Potential Demand	58,714	61,665	66,508	73,688	80,951	83,380	85,881	88,457	91,110	93,843	96,658
Estimated Sustainable Annual Occupancy		64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
Estimated Sustainable Annual Demand		60,736	65,875	74,518	82,694	82,694	82,694	82,694	82,694	82,694	82,694
Total Projected Potential Demand		61,665	66,508	73,688	80,951	83,380	85,881	88,457	91,110	93,843	96,658
less Est. Sustainable Annual Demand		60,736	65,875	74,518	82,694	82,694	82,694	82,694	82,694	82,694	82,694
Unsatisfied Annual Demand		929	633	(830)	(1,743)	686	3,187	5,763	8,416	11,149	13,964
Cumulative Potential Supply Expansion		**3**	**2**	**(2)**	**(5)**	**2**	**9**	**16**	**23**	**31**	**38**

For both markets, the new supply from the pipeline is expected to open beginning in 2019. Demand is estimated to be adequate to absorb the proposed supply.

Limited Service Hotels – Napa Valley

Limited Service Hotels - Napa Valley - Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	1,521	1,521	1,619	1,894	2,003	2,077	2,077	2,077	2,077	2,077
Occupancy	77%	77%	77%	74%	74%	74%	75%	75%	75%	75%
Occupied Rooms	425,351	429,604	453,218	514,959	540,111	559,070	568,579	568,579	568,579	568,579
Averate Room Rate	$200.03	$208.03	$217.01	$225.04	$232.29	$239.58	$246.76	$254.17	$261.79	$269.64
RevPAR	$153.26	$160.98	$166.43	$167.63	$171.61	$176.68	$185.07	$190.62	$196.34	$202.23
Rooms Revenue	$85,082,000	$89,370,000	$98,351,090	$115,884,331	$125,461,559	$133,940,385	$140,304,712	$144,513,184	$148,848,679	$153,314,249

Limited Service Hotels Estimate of Additional Capacity - Napa Valley											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	1521	1,521	1,521	1,619	1,894	2,003	2,077	2,077	2,077	2,077	2,077
Estimated Available Annual Room Nights	555,165	555,165	555,165	590,935	691,310	731,095	758,105	758,105	758,105	758,105	758,105
Total Projected Potential Demand	421,139	425,351	429,604	453,218	514,959	540,111	559,070	564,363	569,710	575,110	580,564
Estimated Sustainable Annual Occupancy		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Estimated Sustainable Annual Demand		416,374	416,374	443,201	518,483	548,321	568,579	568,579	568,579	568,579	568,579
Total Projected Potential Demand		425,351	429,604	453,218	514,959	540,111	559,070	564,363	569,710	575,110	580,564
less Est. Sustainable Annual Demand		416,374	416,374	443,201	518,483	548,321	568,579	568,579	568,579	568,579	568,579
Unsatisfied Annual Demand		8,977	13,230	10,017	(3,524)	(8,210)	(9,509)	(4,216)	1,131	6,531	11,985
Cumulative Potential Supply Expansion		**25**	**36**	**27**	**(10)**	**(22)**	**(26)**	**(12)**	**3**	**18**	**33**

Limited Service Hotels – City of Napa

Limited Service Hotels - City of Napa - Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	731	731	829	1,104	1,213	1,287	1,287	1,287	1,287	1,287
Occupancy	77%	79%	77%	74%	73%	73%	75%	75%	75%	75%
Occupied Rooms	206,248	210,168	233,862	296,917	323,096	343,163	352,316	352,316	352,316	352,316
Averate Room Rate	$200.03	$208.03	$218.91	$230.37	$238.65	$246.53	$254.02	$261.65	$269.49	$277.58
RevPAR	$154.62	$163.86	$169.19	$169.75	$174.15	$180.09	$190.52	$196.23	$202.12	$208.18
Rooms Revenue	$41,255,000	$43,721,000	$51,194,343	$68,401,266	$77,105,796	$84,600,066	$89,496,841	$92,181,907	$94,946,664	$97,795,214

Limited Service Estimate of Additional Capacity - City of Napa											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	731	731	731	829	1,104	1,213	1,287	1,287	1,287	1,287	1,287
Estimated Available Annual Room Nights	266,815	266,815	266,815	302,585	402,960	442,745	469,755	469,755	469,755	469,755	469,755
Total Projected Potential Demand	202,402	206,248	210,168	233,862	296,917	323,096	343,163	349,135	355,224	359,796	364,456
Estimated Sustainable Annual Occupancy		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Estimated Sustainable Annual Demand		200,111	200,111	226,939	302,220	332,059	352,316	352,316	352,316	352,316	352,316
Total Projected Potential Demand		206,248	210,168	233,862	296,917	323,096	343,163	349,135	355,224	359,796	364,456
less Est. Sustainable Annual Demand		200,111	200,111	226,939	302,220	332,059	352,316	352,316	352,316	352,316	352,316
Unsatisfied Annual Demand		6,137	10,057	6,924	(5,303)	(8,962)	(9,153)	(3,181)	2,908	7,480	12,140
Cumulative Potential Supply Expansion		**17**	**28**	**19**	**(15)**	**(25)**	**(25)**	**(9)**	**8**	**20**	**33**

For both markets, the new supply from the pipeline that is expected to open between 2020 and 2023. Demand is estimated to be adequate to absorb the proposed supply.

Full Service Hotels – Napa Valley

Full Service Hotels - Napa Valley -Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	2,088	2,190	2,222	2,603	2,878	2,879	2,879	2,879	2,879	2,879
Occupancy	70%	71%	73%	71%	70%	72%	72%	72%	72%	72%
Occupied Rooms	535,932	568,411	590,322	678,630	739,160	759,821	752,712	752,712	752,712	752,712
Averate Room Rate	$264.32	$276.05	$290.21	$302.62	$313.83	$323.25	$332.95	$342.94	$353.22	$363.82
RevPAR	$185.90	$196.32	$211.26	$216.18	$220.84	$233.75	$238.51	$245.67	$253.04	$260.63
Rooms Revenue	$141,658,215	$156,911,284	$171,320,226	$205,369,171	$231,968,877	$245,611,537	$250,613,401	$258,131,613	$265,875,861	$273,851,577

Full Service Hotels Estimate of Additional Capacity											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	1907	2,088	2,190	2,222	2,603	2,878	2,879	2,879	2,879	2,879	2,879
Estimated Available Annual Room Nights	695,964	762,029	799,259	810,939	950,004	1,050,379	1,050,744	1,050,744	1,050,744	1,050,744	1,050,744
Total Projected Potential Demand	492,077	535,932	568,411	590,322	678,630	739,160	759,821	780,947	802,707	825,119	848,204
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		545,887	572,558	580,925	680,545	752,450	752,712	752,712	752,712	752,712	752,712
Total Projected Potential Demand		535,932	568,411	590,322	678,630	739,160	759,821	780,947	802,707	825,119	848,204
less Est. Sustainable Annual Demand		545,887	572,558	580,925	680,545	752,450	752,712	752,712	752,712	752,712	752,712
Unsatisfied Annual Demand		(9,955)	(4,147)	9,397	(1,916)	(13,290)	7,109	28,235	49,995	72,407	95,492
Cumulative Potential Supply Expansion		**(27)**	**(11)**	**26**	**(5)**	**(36)**	**19**	**77**	**137**	**198**	**262**

Full Service Hotels – City of Napa

Full Service - City of Napa -Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	1,616	1,718	1,750	2,131	2,406	2,407	2,407	2,407	2,407	2,407
Occupancy	70%	70%	72%	70%	68%	70%	72%	72%	72%	72%
Occupied Rooms	410,468	439,183	457,218	541,533	597,950	614,374	632,494	632,494	632,494	632,494
Averate Room Rate	$264.98	$277.02	$291.31	$304.37	$315.84	$325.32	$335.08	$345.13	$355.49	$366.15
RevPAR	$184.43	$194.05	$208.55	$211.93	$215.07	$227.52	$241.26	$248.49	$255.95	$263.63
Rooms Revenue	$108,767,362	$121,663,016	$133,191,287	$164,826,362	$188,854,523	$199,868,868	$211,935,827	$218,293,762	$224,843,144	$231,588,419

Full Service Estimate of Additional Capacity - City of Napa											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	1435	1,616	1,718	1,750	2,131	2,406	2,407	2,407	2,407	2,407	2,407
Estimated Available Annual Room Nights	523,684	589,749	626,979	638,659	777,724	878,099	878,464	878,464	878,464	878,464	878,464
Total Projected Potential Demand	370,268	410,468	439,183	457,218	541,533	597,950	614,374	631,137	648,402	666,185	684,503
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		424,619	451,425	459,834	559,961	632,231	632,494	632,494	632,494	632,494	632,494
Total Projected Potential Demand		410,468	439,183	457,218	541,533	597,950	614,374	631,137	648,402	666,185	684,503
less Est. Sustainable Annual Demand		424,619	451,425	459,834	559,961	632,231	632,494	632,494	632,494	632,494	632,494
Unsatisfied Annual Demand		(14,151)	(12,242)	(2,616)	(18,429)	(34,281)	(18,120)	(1,357)	15,908	33,691	52,009
Cumulative Potential Supply Expansion		**(39)**	**(34)**	**(7)**	**(50)**	**(94)**	**(50)**	**(4)**	**44**	**92**	**142**

For both markets, the new supply from the pipeline that is assumed to open over the next five years. Demand is estimated to be adequate to absorb the proposed supply.

Luxury Hotels and Resorts – Napa Valley

Luxury Hotels and Resorts - Napa Valley -Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	985	1,029	1,181	1,181	1,663	1,664	1,664	1,664	1,664	1,664
Occupancy	69%	70%	70%	74%	68%	70%	70%	70%	70%	70%
Occupied Rooms	248,682	263,908	300,089	317,904	411,663	425,067	425,067	425,067	425,067	425,067
Averate Room Rate	$632.11	$671.18	$732.22	$735.79	$817.45	$854.33	$879.96	$906.36	$933.55	$961.56
RevPAR	$437.38	$471.77	$509.88	$542.79	$554.51	$598.03	$615.97	$634.45	$653.49	$673.09
Rooms Revenue	$157,194,622	$177,130,689	$219,730,453	$233,910,449	$336,514,940	$363,147,981	$374,042,450	$385,263,824	$396,821,839	$408,726,374

Luxury Hotels and Resorts - Estimate of Additional Capacity											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	972	985	1,029	1,181	1,181	1,663	1,664	1,664	1,664	1,664	1,664
Estimated Available Annual Room Nights	354,658	359,403	375,463	430,943	430,943	606,873	607,238	607,238	607,238	607,238	607,238
Total Projected Potential Demand	239,491	248,682	263,908	300,089	317,904	411,663	422,493	433,456	444,737	456,345	468,290
Estimated Sustainable Annual Occupancy		70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Estimated Sustainable Annual Demand		251,582	262,824	301,660	301,660	424,811	425,067	425,067	425,067	425,067	425,067
Total Projected Potential Demand		248,682	263,908	300,089	317,904	411,663	422,493	433,456	444,737	456,345	468,290
less Est. Sustainable Annual Demand		251,582	262,824	301,660	301,660	424,811	425,067	425,067	425,067	425,067	425,067
Unsatisfied Annual Demand		(2,901)	1,084	(1,572)	16,244	(13,149)	(2,574)	8,389	19,670	31,278	43,223
Cumulative Potential Supply Expansion		**(8)**	**3**	**(4)**	**45**	**(36)**	**(7)**	**23**	**54**	**86**	**118**

The new luxury properties in the pipeline are assumed to open in the next five years. Demand is estimated to be adequate to absorb the proposed supply.

Conclusions and Recommendations for New Hotel Development

- We recognize that there are inherent tensions in the Napa community on a number of issues; the development of additional lodging facilities solicits passionate opponents and supporters. Tourism is an important industry for the market and a major generator of public and private revenue. As lodging expands, other elements are affected – most notably traffic, parking, and housing. The availability of water may be an issue for properties in the unincorporated areas of the county. The experiences of residents, workers, and visitors are all impacted by these items and care must be taken to improve all the elements concurrently to the benefit of all.

  The Napa Valley has been and remains a desirable location for hotel development. The expansion of the market over the last twenty years has been sporadic due to the challenges of development in the area and the economic cycles. Finding and acquiring a suitable site, obtaining entitlements, and financing new lodging construction is difficult in most locations but particularly demanding in the area. Compounding the development process is the rising cost of construction. As a result of these factors, lodging projects can take many years to come to fruition.

  On the list of proposed hotels are developments that have been in the pipeline for more than a decade. While there is still expectation that these hotels and resorts will happen, the timeline for these projects is opined to be speculative. Furthermore, the facilities that were approved some time ago may be different than what would be proposed today. The difficulty of the approval process means that going back for revised approvals would further delay the project.

  The opening of the Hampton Inn, the Archer, the expansion of the Meritage, and the development of the Cambria Hotel demonstrates that a variety of new hotels can be successfully opened within a relatively short time frame. A more expedited process helps to ensure a more successful development, giving investors and builders an ability to be more responsive to the timing, design, market trends, and financing aspects of the project.

- A number of full service hotels have opened in the city of Napa since the 2007 study and The Meritage is completing a major expansion in 2018. The pipeline for the city includes 24 lodging properties which are estimated to be completed in the next six years. These hotels represent a range of product types with different amounts of meeting space. Generally full service and luxury hotels and resorts are expected to have a minimum of 25 to 50 square feet of meeting space per room and limited-service hotels to have 5 to 15 square feet per room. Outdoor event space is highly sought-after for social events in the Napa Valley and should also be considered as additional features of these types of properties.

- Not all hotel development has to be downtown. Different types of hotels can thrive in different locations. The consultants recommend that a variety of sites in the city of Napa be considered for hotel use.

- In the 2007 HVS Study, the growth of hotel inventory in Napa was opined to be enhanced by the development of a conference/convention “multipurpose” facility. At the time of the last study, the hotel market performance was much more challenged than in the current cycle. As of this study, the strength of the market has demonstrated that the current inventory of hotels has been able to succeed with the existing meeting space. It would be anticipated that a larger meeting facility could serve to enhance hotel demand during less robust periods. With the improvements in annual transient demand for the area and the expansion of meeting space at the new full-service hotels and the space offerings at The CIA at Copia, the

development of a conference/convention center does not appear to be as catalytic for the hotel market as in the 2007 HVS study. Additional research would be suggested to explore this issue.

- The study does opine that a dedicated convention/conference may not be as recommended as in the 2007 HVS Study, however meeting space associated full service and luxury hotels is important to maintaining demand for these types of properties. The ratio of meeting space for the proposed full-service hotel at the current City Hall site should include an adequate complement of meeting space considering the amount of room inventory.
- Since the 2007 HVS study, ridesharing services as a means of transporting visitors to and within a destination have blossomed. In the Napa Valley, the use of these services by hotel guests visiting wineries and restaurants could be of benefit to ease the need for parking at hotels. We are not experts in parking and recommend further study of the impact of the increased use of rideshares and public transportation options.
- Demand for lodging in the city and county of Napa has been consistently strong in recent years and barring any unforeseen event, is expected to continue. The analysis in this study shows that the market appears capable of absorbing the existing pipeline of new hotels, although that absorption is anticipated to require a number of years. The hotel market in Napa has continued to thrive even as new hotels have opened. As the current pipeline of new supply is developed and absorbed, the need will arise for additional accommodations, and consideration of additional development should be analyzed. The depth of demand for all types of hotels in the area has yet to be fully tested. Due to the expectation that the market will be able to support additional hotels over the long-term and the long development timeline for hotel projects, we recommend that the city of Napa continue to review new hotel projects for development over the long-term. With more types of hotel products and brands available since the 2007 study and a changing demographic base of consumers, consideration should be given to the aspects of hotel projects which can expand the base of demand in the long-term. Experiential based lodging, dedicated wellness centers, lodging facilities with communal public space, upscale hostels, and other facilities are evolving hotel products that are being developed in other destinations. Over the next ten years, additional types of hotel facility trends are likely to gain popularity. It is our recommendation that a wide variety of hotel products be approved in order to support the long-term attraction of the destination.

Table of Contents

Executive Summary III
Introduction 1
Notable Market Trends 4
Regional Map 5
Regional Analysis 6
Housing Index and Cost Index 9
Employment 10
Employment/Income 10
Migration 11
Local Area Map 13
Napa Valley's Local Area Analysis 14
Local Area Characteristics 14
San Francisco, Oakland, and Sacramento International Airports 15
Local Demographics 16
Classification of Lodging Facilities 20
Historical Occupancy and Rate Analysis 22
Lodging Supply 25
Demand Analysis and Forecast of Occupancy and Average Rate 33
Occupancy and Potential Demand Methodology 33
Transient Demand 35
Meeting and Group Demand 35
Latent Demand 36
Revenue and Expense Analysis 71
Alternative Accommodations in the City of Napa 73
Meeting Space Analysis 75
Assumptions and Limiting Conditions 87
Certification of Appraisal 89
Addenda Contents 90

Introduction

Scope of Work

The objective of the study is to provide the City of Napa with a comprehensive understanding of the key characteristics of Napa Valley's current lodging inventory, the likely impact of hotel development on Napa Valley's market dynamics, and the market's overall capacity for future growth given prevailing demand and supply expectations. It is our understanding that the findings, including considerations for new hotel development, will be used for economic planning purposes.

The market study considered the existing and proposed hotels in the Napa Valley based on the available data. We understand that the hotel market in the City of Napa and the Napa Valley as a whole, has experienced strong growth in supply and performance in recent years and that a plentiful pipeline of new hotel projects are being proposed throughout the area. This study seeks to address the overall lodging performance of the existing and additional lodging inventory and determine the extent to which demand growth is likely to absorb proposed lodging supply.

The research and analysis for the study was conducted between December 2017 and January 2018. The project included the following process:

1. Cushman & Wakefield professionals met with representatives of the City of Napa, stakeholders identified by the city of Napa, hotel operators, investors, and developers.
2. Relevant data about the lodging market was gathered from the City of Napa, in-house databases, Smith Travel Research, and other sources in order to produce a detailed historical review of lodging inventory in Napa Valley as well as projections with respect to supply growth in the near term. These resources included.
3. Historical lodging performance was reviewed based on custom STR Reports for the four product classifications.
4. Publicly available information on current and future demand generators was reviewed.
5. Community growth levels and economic development activity trends were analyzed.
6. The existing hotel properties in the Napa Valley were inventoried and categorized into four lodging property types: Bed & Breakfasts and Small Inns, Limited-service Hotels, Full-service Hotels, Luxury Hotels and Resorts. For each category, we reviewed past performance and analyzed how the market has adapted to past hotel inventory changes.
7. Status information for current proposed hotel projects was reviewed and for the existing pipeline of hotel projects, the potential (likelihood) of construction and opening status was evaluated. Future hotel inventory was allocated to existing supply in the appropriate categories.
8. We analyzed historical and potential occupied room nights for each hotel category, evaluating group and transient demand, and latent demand.
9. Using the data developed in the prior steps, a ten-year forecast of supply and demand for each category was prepared resulting in annual occupancies.
10. Historical average rates for each category were analyzed and forecast. The RevPAR (revenue per available room or occupancy X average rate) was calculated, resulting in a projection of room revenue.

11. The operating performance of proposed lodging projects is estimated to provide the basis for the Impact Analysis being prepared by Bay Area Economics (BAE). From the findings developed in the Hotel Market Study, the forecasts are consolidated into the four product categories. For each of these product categories, the forecasts of room revenue are expanded into a representative year of revenue and expense using industry standards and/or information from our databases. This exercise provides general operating results for the expected inventory but not specific proformas for individual properties. The results are used by BAE to estimate and project direct and indirect/induced spending, tax revenue impacts, and employment for a stabilized year.

12. For the proposed hotel projects and inventory included in the supply and demand forecasts, general estimates of development costs per room (land, construction, and furniture, fixtures, and equipment) were using market based costing sources, allocations, and/or information from our databases. These costs were used by BAE to develop property tax projections.

13. Alternative Accommodations Assessment – Cushman & Wakefield prepared a broad narrative of the impact of alternative accommodation units (e.g. Airbnb, Homeaway, Vrbo, etc.) on demand for traditional hotel rooms in the Napa lodging market based upon its knowledge of the Napa lodging market as well as recently compiled survey data with respect to consumer utilization of alternative accommodation units in other leisure destination markets as well as in key U.S. urban markets. The impact of alternative accommodations is difficult to validate due to the decentralized and private nature of this business. The findings considered available historical data on transient occupancy tax collections and the number of alternative accommodation units presently available in the Napa market into its analysis to the extent such data are available from the City of Napa.

14. Using the supply and demand forecasts, the consultants considered the relationship between lodging demand and the anticipated supply growth based on the current pipeline of projects in all phases, and developed opinions of the impact on market performance by product category, particularly RevPAR. The consultants evaluate as reasonably as possible, the ability of the market to absorb new supply over the long-term and trend the potential for growth or decline in room revenue. It is very important to consider that changes in RevPAR may be transitional or cyclical. Proposed hotels currently in the pipeline will be given the greatest analysis and weight. Based on these projects, the ability to support additional hypothetical inventory was considered. A qualitative evaluation of the historical and future hotel market occupancy, average rate, and RevPAR trends was also prepared. Periods of absorption of new rooms are reflected in negative potential demand; conversely, the market's capacity for new rooms is shown by positive room potential.

15. Meeting space in the Napa Value was reviewed and analyzed. A discussion of the meeting space is presented.

16. The consultant developed recommendations with regard to the potential for future lodging development as well as means of inducing sufficient demand growth to support future development given the aforementioned market analysis and projections.

Projecting demand is both a skill and an art. To estimate the levels of occupied room nights, we rely on historical trends and our professional experience working with lodging markets over 30 years. The hotel market is cyclical but not always predictable. In general, periods of robust growth has changed course due to unforeseen and/or systemic events. As lodging is an industry built on one-night leases, the impact of an event can be swift and deep. Economic downturns can impact the lodging industry in a more subtle manner as operators have strategies to manage nightly rates to attract hotel guests.

As of January 2018, global lodging industry leaders are not expressing concern about a downturn affecting the current cycle, which is still in a growth mode. The robust RevPAR growth that launched during the recovery from the great recession began to moderate in 2016. It is sometimes difficult to correlate a direct cause and effect in lodging performance but factors said to influence the moderation in RevPAR, particularly average rate, that year include the continued rise of Airbnb, the increase in new hotel supply, the presence of the Zika virus, and the uncertainty and anxiety surrounding the presidential election. These palls over the lodging industry continued through roughly mid-2017. With a renewed cautious optimism, leisure and business travelers started to hit the road in greater numbers and provided operators the confidence to increase rates. The regained sureness in the strength of the travel economy has resulted in a sentiment of continued growth in lodging revenues, albeit at lower levels than experienced post-recession.

While industry participants caveat their assurance about growth with caveats about “black swan events”, continued growth in lodging revenues nationally are anticipated to be in line with the post-2015 trends, in the 3.0 to 5.0 percent range. Our interviews and work with local Napa Valley lodging operators generally follow similar guidance, though the opportunities for specific properties to exceed those levels is possible due to particular circumstances such as new construction, renovation, and branding/marketing efforts.

The depth of the analysis is intended to be appropriate in relation to the significance of the issues as presented herein. The data have been analyzed and confirmed with sources believed to be reliable, in the normal course of business, leading to the conclusions set forth in this report.

This assignment is intended to comply with the Uniform Standards for Professional Appraisal Practice USPAP for an Appraisal Report. The report was also prepared to comply with the requirements of the Code of Professional Ethics of the Appraisal Institute.

General Inflation and Growth Assumptions

Our projections incorporate an opinion of general price inflation based upon economic projections from various sources (including the U.S. Congressional Budget Office), tempered by our observations and expectations derived from historical perspectives both locally and nationally. Accordingly, to portray price level changes, we have assumed an average CPI inflation rate of 3.0 percent per year throughout the 10-year projection period. This assumption is intended only to portray an expected long-term trend in price movements, rather than for a specific interval in time.

Quality Control

Cushman & Wakefield Western, Inc. has an internal Quality Control Oversight Program. This Program mandates a "second read" of all appraisals. Assignments prepared and signed solely by designated members (MAIs) are read by another MAI who is not participating in the assignment. Assignments prepared, in whole or in part, by non-designated appraisers require MAI participation, Quality Control Oversight, and signature.

For this assignment, Quality Control Oversight was provided by Mark D. Capasso – Executive Director and National Practice Leader – Hospitality & Gaming.

Notable Market Trends

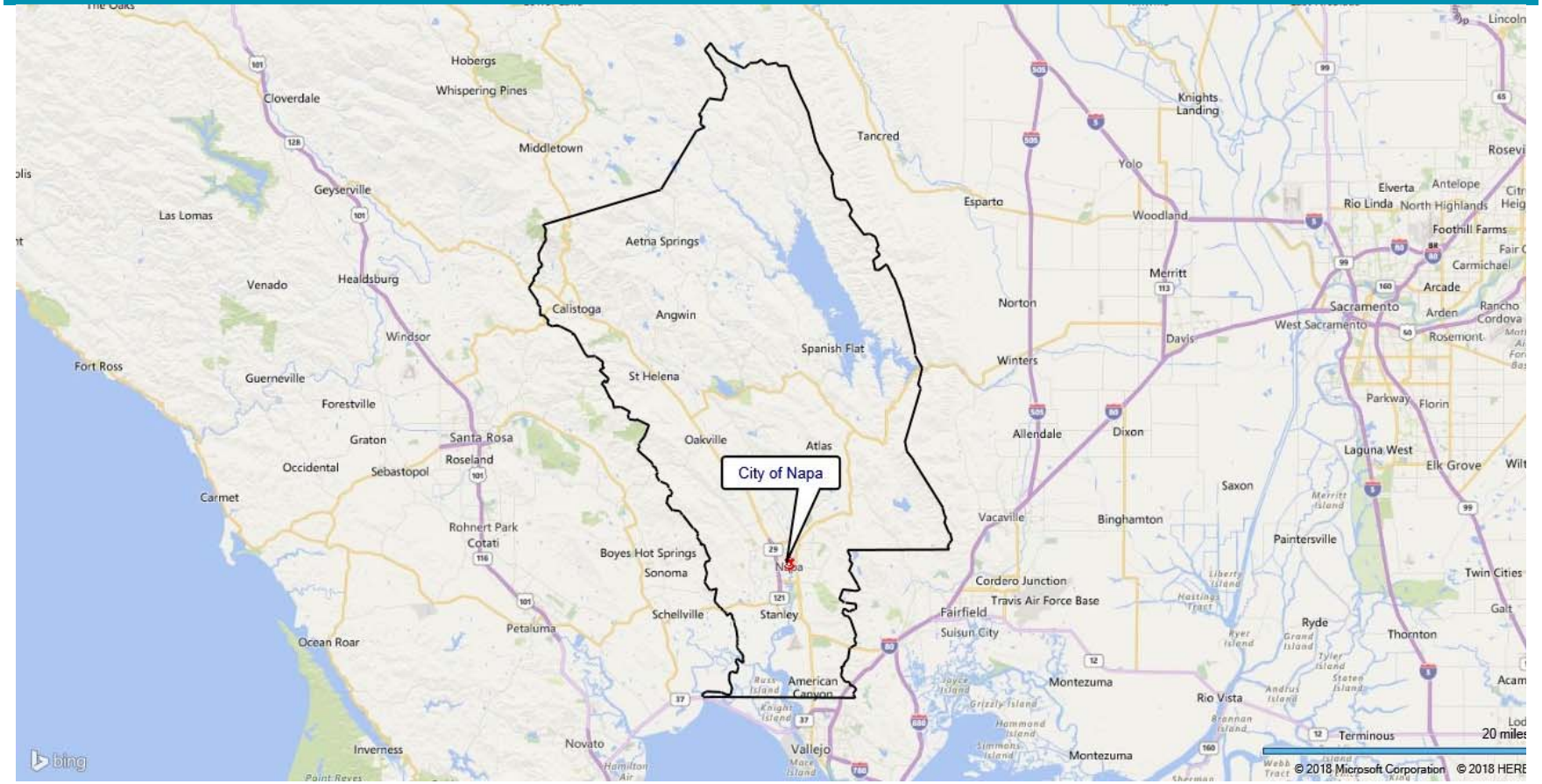
The research and analysis undertaken for this project revealed some major themes and trends in the Napa Valley lodging market.

In recent years, the Napa Valley has been impacted by a series of natural events that have affected some of the lodging properties and the overall market. In August 2014, a 6.0 magnitude earthquake was centered between the cities of Napa and American Canyon. Several older commercial buildings in downtown Napa showed signs of extensive external damage. Some of the historic buildings damaged in the earthquake have been repaired while others are still awaiting renovation and restoration. As examples, the Uptown Theater was the first to reopen on November 9, 2014. The United States Postal Service determined that repairing the post office would be too costly and sold it to a developer who plans to turn the building into a hotel. The contract for restoration of the courthouse was recently awarded by Napa County in August 2017. The heavily damaged Trefethen Vineyard Eschol building was restored from earthquake damage following over two years of repairs and improvements.

From a hotel perspective, the earthquake primarily affected lodging facilities in downtown Napa. The Andaz Hotel, the Westin Verasa HOtel, and the Marriott Hotel all suffered some damage. The Andaz Hotel partially reopened a few weeks later and was fully reopened in March 2015 after a renovation. The Marriott was open after a few weeks. The Westin Verasa Hotel suffered the most damage and reopened its rooms in stages. From a visitor perspective, operators report that some potential visitors were inquiring about the earthquake for over two years following the event.

Despite these challenges, the hotel market in Napa has been resilient and robust and continues to attract new development. The Napa Valley lodging market performance is at an all-time high and most owners and operators are participating in the benefits. The success of the market and record occupancies are also attractive to developers. We are seeing record levels of hotel market performance in the Napa Valley and the strength of the market at this point in time is anticipated to support additional projects. This is in contrast to the economic environment at the time of the last HVS 2007 Study.

Regional Map



Regional Analysis

Introduction

The subject property is located in the city of Napa, within the Napa Metropolitan Statistical Area (MSA) of California. In this section, the various areas of influence in the Napa MSA will be defined and analyzed. The analysis concentrates on the four major forces affecting real property values. These four major influencing factors include social forces, economic conditions, governmental controls and regulations, and environmental conditions. Note that the following overview of demographic and economic characteristics and trends (charts and text) was prepared by Economy.com, Inc. and is used by permission. Note that the U.S. West area includes the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming for the purpose of this analysis.

Recent Performance

Napa's expansion is kicking into high gear. Payroll employment is climbing faster than a year earlier, and job growth exceeds the state and U.S. averages. Consumer industries and healthcare are leading the way, boosting job growth during the first half of the year following a lull in 2016. But progress in critical beverage manufacturing is slowing because of labor constraints. After little movement the last two years, the labor force is beginning to expand, and the unemployment rate is less than 4 percent for the first time since 2007. As low-wage consumer services have gained prominence, the rise in average hourly earnings has lagged that nationally, and the seasonal nature of these jobs is also reflected in a shorter average workweek. Nonetheless, superior income gains are fueling larger than average increases in single-family house prices, sales and construction.

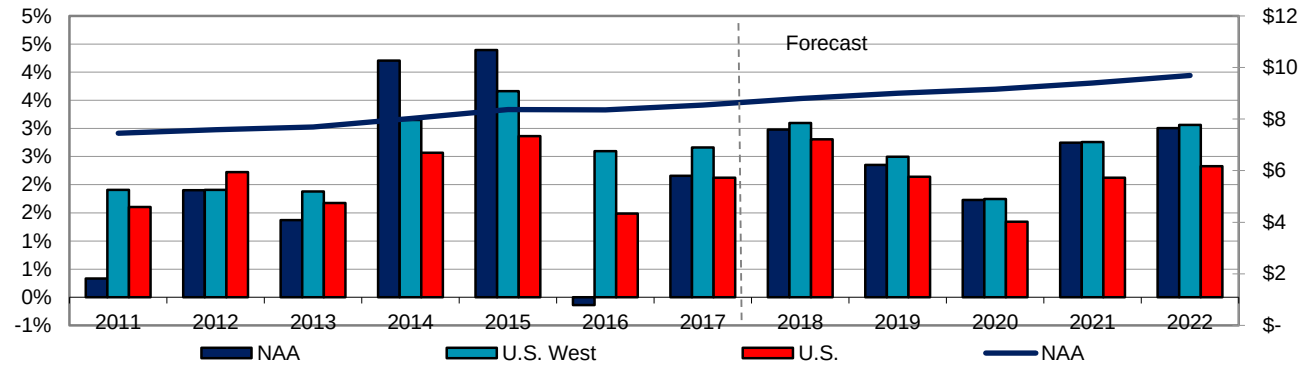
Economics

The economics of the commercial and residential real estate markets are reflected by an array of financial, employment, population, construction activity and housing indicators. In order to understand the characteristics of the subject's regional market, we reviewed the most recently published, statistically reliable reports that included an overview of these items.

Gross Product

Gross Metropolitan Product (GMP) is a concept analogous to Gross Domestic Product, the commonly accepted measure used to calculate the total annual value of goods and services produced by a nation. The following graph reflects the Gross Product for the Napa Metropolitan Statistical Area (MSA), U.S. West, and United States.

Gross Product By Year ($000)



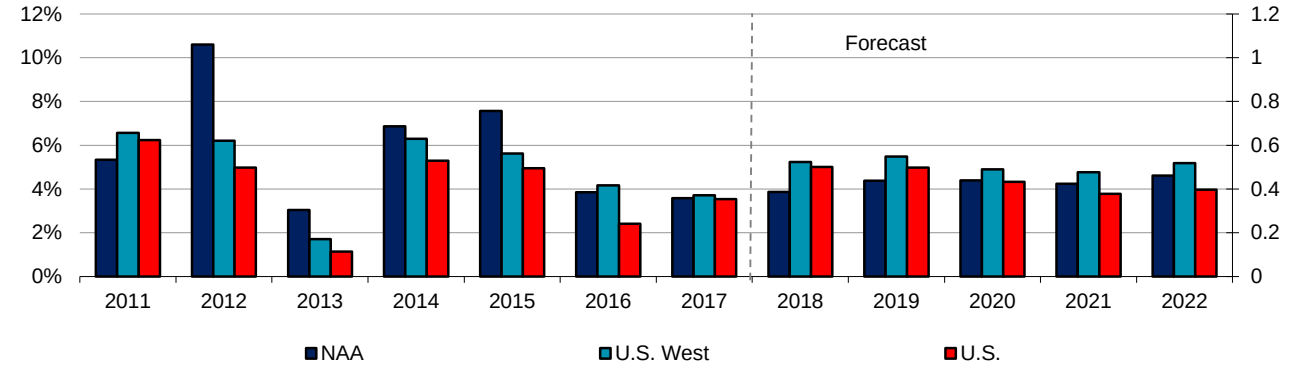
Source: Data Courtesy of Moody's Economy.com

The Napa GMP has increased from $7.6 billion in 2012 to $8.5 billion in 2017 reflecting a total change of 12.5 percent over the past six years and an average annual change of 2.4 percent. The Napa GMP is expected to increase from $8.8 billion in 2018 to $9.7 billion in 2022, representing an overall increase of 10.2 percent and an average annual change of 2.0 percent, over the five-year forecast period.

Personal Income

Personal income growth is measured by the change in income received by all persons from all sources year-over-year and provides a significant indication of the region's economic performance. The graph below reflects the personal income growth for the Napa Metropolitan Statistical Area (MSA), U.S. West, and United States.

Personal Income Growth by Year



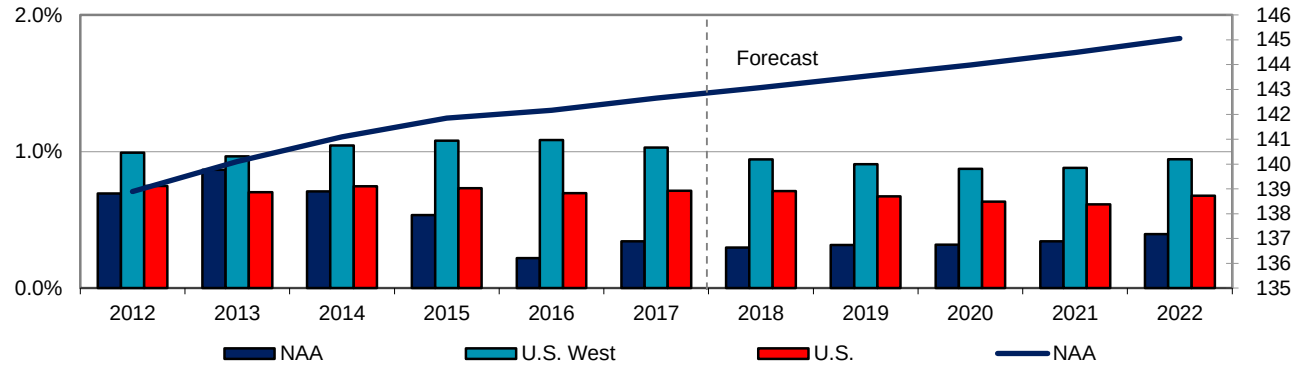
Source: Data Courtesy of Moody's Economy.com

Despite slow growth in 2013, personal income growth experienced strong years in 2014 and 2015, out performing the U.S. and U.S. West areas growth rates. Between 2018 and 2022, personal income growth is expected to be generally in-line with the growth rates expected for U.S. and U.S. West areas. Overall, personal income growth indicates a healthy regional economy.

Population

The graph below reflects the total population and population growth for the Napa Metropolitan Statistical Area (MSA), U.S. West, and United States.

Population Growth By Year (000)



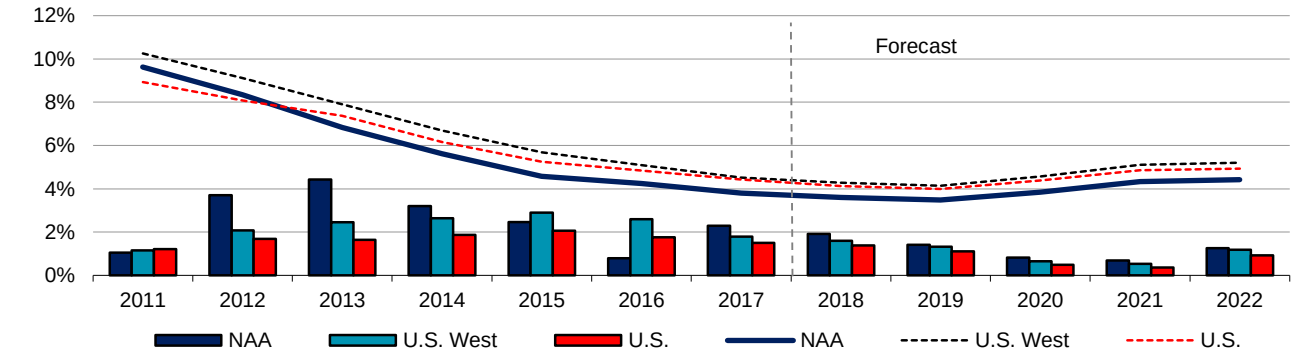
Source: Data Courtesy of Moody's Economy.com

Population trends have been favorable in the Napa MSA, with the metropolitan area increasing from 139,000 residents in 2012 to 143,000 in 2017. This represents a net increase of 4,000 persons, reflecting a total increase of 2.70 percent and an average annual increase of 0.6 percent. Population growth is expected to continue over the next five years. The metropolitan area's population (based on the year 2017 census) is projected to increase from 143,000 in 2018 to 145,000 in 2022. This represents an overall increase of 2,000 persons, reflecting a 0.3 percent annual growth rate.

Employment

The graph below reflects the total employment growth and unemployment rate for the Napa Metropolitan Statistical Area (MSA), U.S. West, and United States.

Total Employment Growth and Unemployment Rate By Year



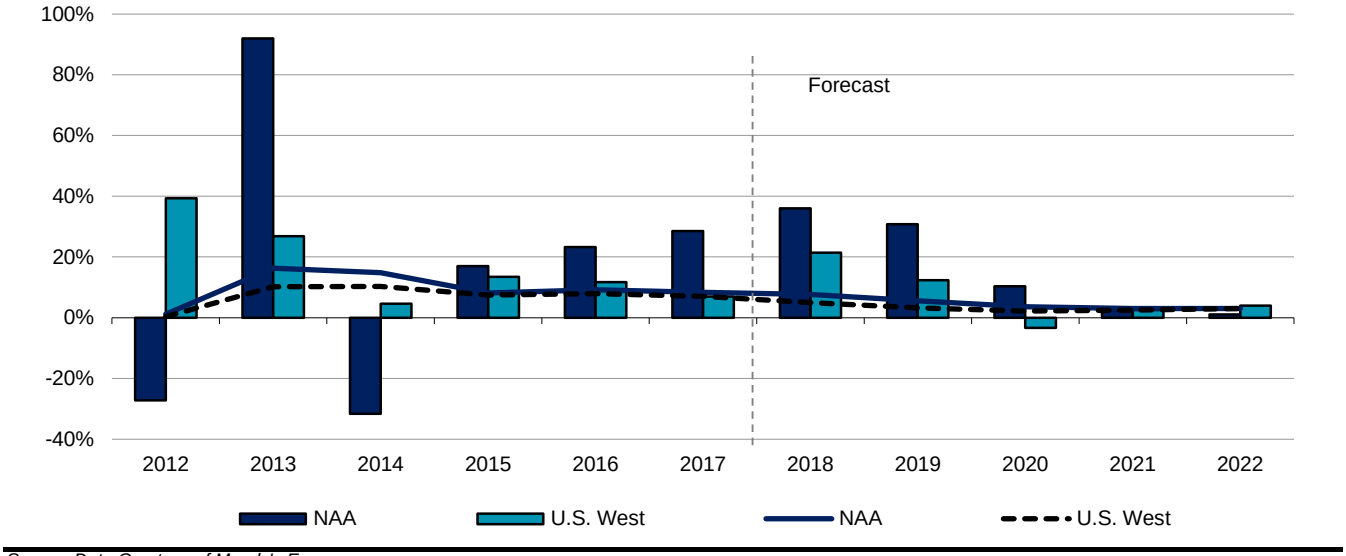
Source: Data Courtesy of Moody's Economy.com

The Napa MSA employment has increased from 63,733 in 2012 to 72,572 in 2017; this equates to an average annual growth rate of 2.6 percent. The unemployment rate decreased from 4.3 percent in 2016 to 3.8 percent in 2017, below the national trend. Total employment is projected to increase from 73,961 in 2018 to 77,098 in 2022; this equates to an average annual growth rate of 1.0 percent. Changes in total employment will factor into moderate changes in the unemployment rate, which is forecast to increase from 3.6 percent in 2018 to 4.4 percent in 2022.

Housing Permits and Home Price Appreciation

The graph below reflects the total housing permits and home price appreciation per year for the Napa Metropolitan Statistical Area (MSA), and the U.S. West area.

Total Housing Permit Growth and Home Price Appreciation by Year



Source: Data Courtesy of Moody's Economy.com

Existing home prices in the Napa MSA have increased from $187,952 in 2012 to $321,457 in 2017, reflecting a total price increase of $133,505, for an annual (average) home appreciation rate of 11.3 percent. Existing home prices are expected to continue to steadily escalate, as they are projected to increase from $346,031 in 2018 to $401,613 in 2022, reflecting a total price change of $55,582, for an annual (average) price appreciation of 3.8 percent. Housing permits in the Napa MSA spiked in 2013 and between 2018 and 2022, are expected to achieve faster growth rates to U.S. and U.S. West areas.

Housing Index and Cost Index

The Office of Federal Housing Enterprise Oversight (OFHEO) estimates and published quarterly house price indexes for single-family detached properties using data on conventional confirming mortgage transactions obtained from the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae). These indexes use a repeat-purchase method, as this method is not affected by the mix of homes sold. The House Price Index is based on transactions involving confirming, conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac.

The Cost of Doing Business Index for the Napa MSA is 14.0 percent higher than the national average. The Cost of Doing Business Index is composed of labor costs, tax burdens, energy costs, and office costs. Labor costs are measured by unit labor costs, or earnings per dollar of output. Unit labor costs are determined for each 3-digit SIC industry for each MSA and compared to unit labor costs for the same industries nationally. Energy costs are measured by average cents per kilowatt-hour (Kwh) charged to commercial and industrial users. Tax burdens are measured by total taxes and fees as a percent of total personal income in each regional area. (Business contributions to unemployment and worker's compensation programs are also included in the tax measure because they represent costs for labor hired.) Office costs are measured as the average price paid per square foot for Class A office space.

The Cost of Living Index for this MSA is 32.0 percent above the national average. The cost of living index measures the relative cost to the average household in the nation to maintain its standard of living in each metropolitan area. The index is created by summing expenditures on various components of consumption in each regional area relative to average national expenditures on the components. The components that vary across metropolitan areas include housing food and apparel, utilities, transportation and auto insurance.

Employment

The top employers in the Napa Metropolitan Statistical Area, according to Regional Financial Associates, are identified in the table below.

Napa MSA Top Employers	
Napa State Hospital	2,303
St. Joseph Health Queen of the Valley	1,250
St. Helena Hospital	1,050
Trinchero Family Estates	675
Treasury Wine Estates	600
Meadowood Napa Valley	600
Silverado Resort	425
Mezzetta	350
Boral Ltd.	325
Multi-Color Corp.	314
Pacific Union College	300
Vintage Inn & Spa	300
WestAmerica Bank	272
Wal-Mart Stores Inc.	250
Kaiser Permanente	225
The Meadows of Napa Valley	220
The Carneros Inn	200
Auberge Resorts	200
The Doctors Co.	200
Bank of the West	184

Sources: County of Napa, 2016, North Bay Business Journal Book of Lists, 2017

In terms of the nation's largest 409 metropolitan statistical areas, this market ranks 74th in current and projected employment growth from 2017 through 2019. Additionally, total growth occurring between 2017 and 2022 is expected to remain flat, ranking 77th.

As shown in the chart above, Napa State Hospital and St. Joseph Health Queen of the Valley employ the largest number of employees, with about 2,303 and 1,250 respectively. St. Helena Hospital and Trinchero Family Estates, followed by Treasury Wine Estates employ approximately 1,050 employees, 675 employees, and 600 employees respectively.

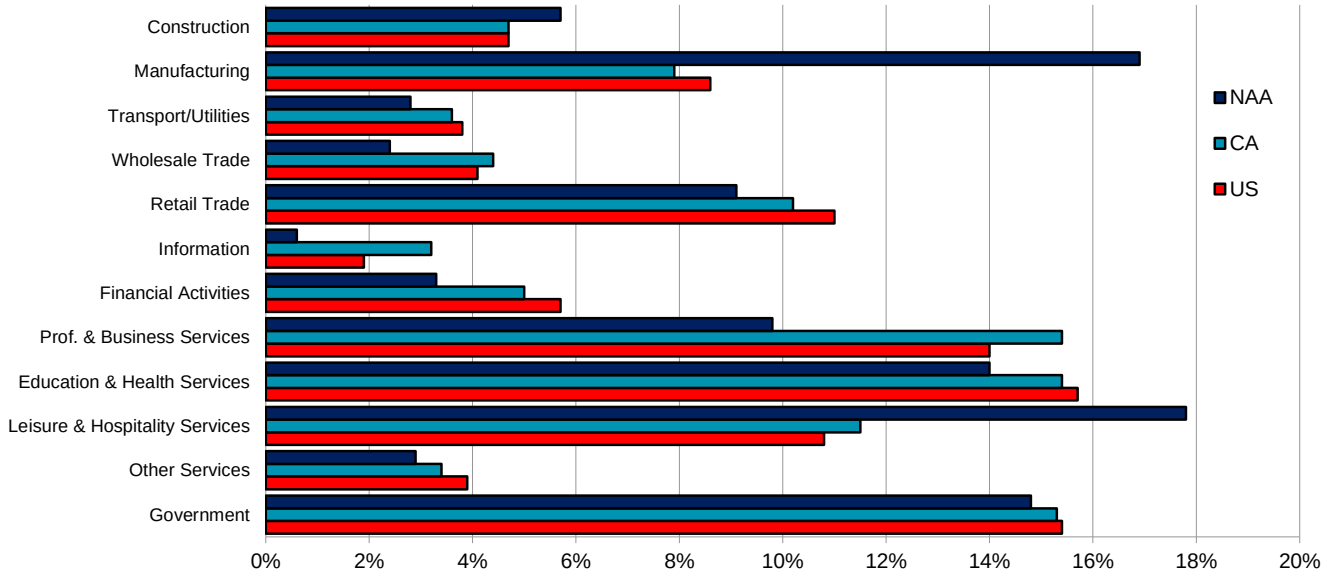
Competition

Changing consumer preferences will force Napa's wine business to adapt to stay competitive. Profit margins are higher on sales made directly to consumers, since vintners are able to capture the markup that would otherwise go to retailers and restaurants. Up until recently, shipping alcohol to consumers directly was illegal in almost every state. But 44 states now allow it and sales are expanding. According to Silicon Valley Bank, direct-to-consumer sales made up 60 percent of wineries' revenue, up from 50 percent just four years earlier. Every wine region is experiencing strong online sales, especially neighboring Sonoma County. The trend bears watching because Napa specializes in fine wines, and millennials, who buy the most goods online, prefer cheaper wines.

Employment/Income

The chart below reflects employment and income segregation for the Napa Metropolitan Statistical Area.

Employment by Sector



Source: Data Courtesy of Moody's Economy.com

As shown in the chart above, the Napa MSA has a very large leisure and hospitality services sector that employs almost 18 percent of all employed. It should also be noted that the leisure and hospitality services sector represents the lowest average income of all industries in the area; manufacturing, government, and construction sectors represent the highest.

Tourism

The growing prestige of other wine regions combined with higher development fees will limit job growth in tourism-related industries. In 2016, visitor industries generated $80.3 million in tax revenues for Napa County, up 25 percent from $64.2 million two years earlier. Tourism, and hotels in particular, has been a key source of investment, but a fourfold increase in hotel construction fees last August to help fund needed affordable multifamily rental housing will slow the pace of building. Though the hike in fees will help guard against overcapacity, there is also a risk of underinvestment. As the city and its residents push for affordable housing over new-hotel construction, room rates will increase as supply ebbs, and tourists may opt for cheaper wine regions such as those in Oregon or Washington, where they can get more bang for their buck.

Migration

The summary chart below reflects the sources for migration into and from the Napa Metropolitan Statistical Area, according to 2014 tracking data from the IRS.

Napa Migration Flows

Into Napa		From Napa	
City	Number of Migrants	City	Number of Migrants
Vallejo, CA	1,516	Vallejo, CA	1,696
Oakland, CA	531	Santa Rosa, CA	487
Santa Rosa, CA	509	Oakland, CA	451
San Francisco, CA	386	Sacramento, CA	319
Sacramento, CA	259	San Francisco, CA	229
Los Angeles, CA	186	Los Angeles, CA	136
San Rafael, CA	172	Riverside, CA	111
San Jose, CA	155	San Rafael, CA	101
San Diego, CA	105	San Jose, CA	101
Riverside, CA	104	San Diego, CA	84
Total Inmigration	6,029	Total Outmigration	5,838
Net Migration	**191**		

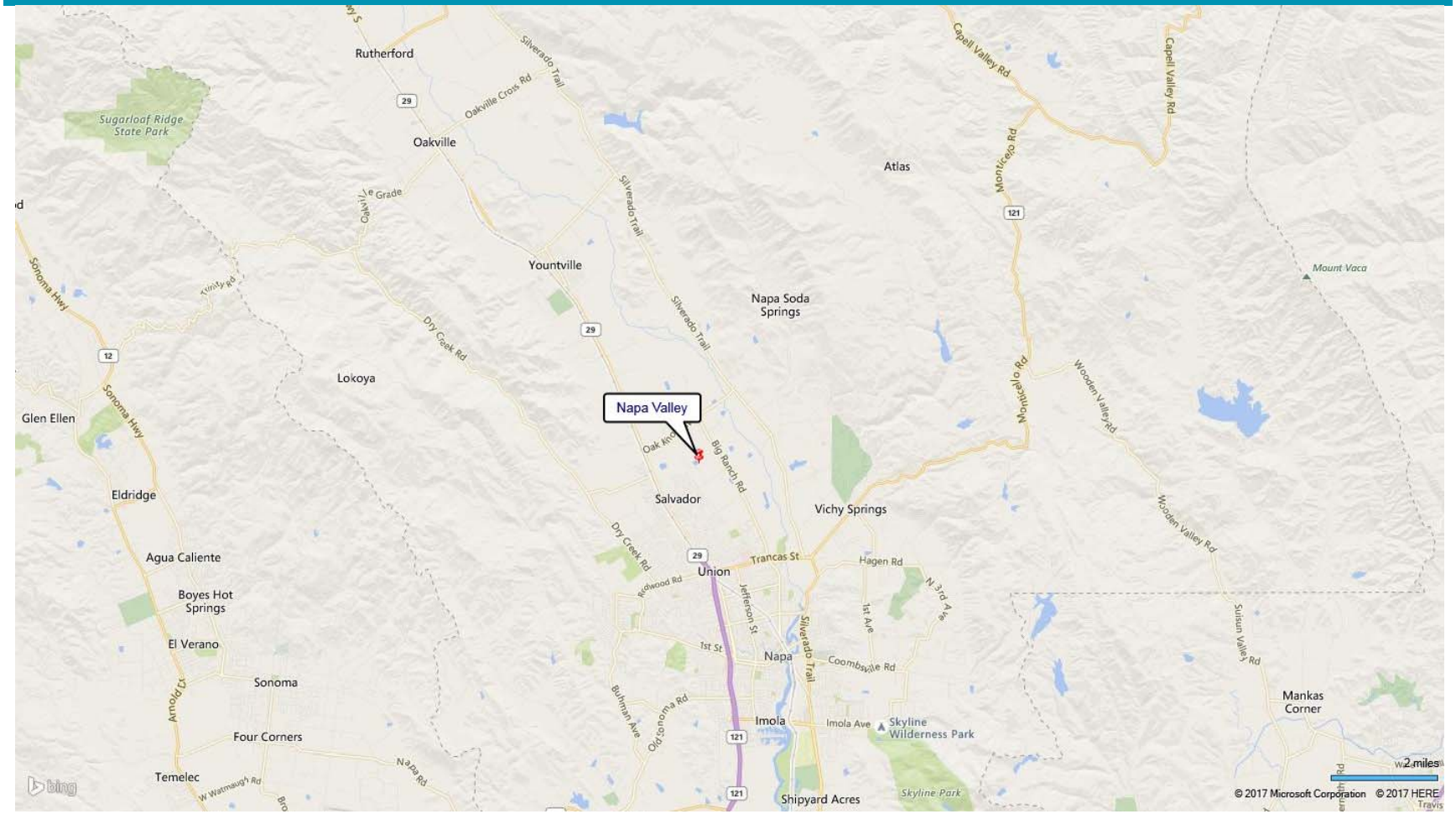
Sources: IRS, 2014, Census Bureau, Moody's Analytics

As shown above, Vallejo and Oakland have provided the greatest number of new residents with around 1,516 and 531 respectively. Vallejo and Santa Rosa represent the largest outflow of residents at around 1,696 and 487 respectively. The net migration was positive, with about 191 new residents in 2014.

Conclusion

A run of strong job growth is responsible for an upgrade to this year's employment forecast, and next year's outlook is a bit stronger as well, but Napa's economy will lose some momentum over the coming year as labor scarcity becomes acute. Nevertheless, wine producers and tourism will benefit from increased consumer spending and lead the economy forward. The metro area has few other drivers. Long term, Napa's world-class wineries will attract tourists, enabling the metro area to keep pace with California in job and output gains.

Local Area Map



Napa Valley's Local Area Analysis

Napa Valley comprises most of Napa County and is flanked by two mountain ranges – the Vaca Mountains to the east and the Mayacamas to the west. The area's Mediterranean climate, dry conditions for much of the year, dramatic hills and celebrated vineyards provide an ideal environment for producing world-class wine and have made the area a popular year-round visitor destination.

The city of Napa is experiencing a revival. In downtown Napa alone, new public and private investment totals more than $1.6 billion since 1996. The significant investment has resulted in new restaurants, tasting rooms, hotels, and markets, as well as the creation of a vibrant riverfront district. Downtown Napa began to see steady improvements and development in the area including the opening of the Oxbow Market and surrounding restaurants, the addition of new upscale full service hotels, and the opening of the CIA at Copia. The city now contains tasting rooms, restaurants, retail, and parking designed to attract residents and visitors.

One of the big draws for downtown is music, including the three-day Bottle Rock music festival, which draws marquee names, at the end of May. The rest of the year, there's live music seven nights a week between venues such as the Uptown Theatre (restored by locals including Francis Ford Coppola), Silo's at the Hatt Building, and Blue Note Napa, housed in the former Napa Valley Opera House.

"First Street Napa" is a $200 million district redevelopment that spans three city blocks in the heart of downtown Napa. The project has been opening in phases since the fall of 2017, and consists of 325,000 square feet of mixed-use development, including 110,000 square feet in 45 shops, restaurants, tasting rooms, and live music venues; 30,000 square feet of office space; and a 183-room Archer Hotel.

Access

The circulation system in the Napa Valley (and the county) is dominated by use of private vehicles, and most travelers to the area arrive by car. Highway 29 is the principal north-south arterial in the valley in terms of traffic volume, accommodating approximately 50,000 vehicles per day on a typical summer weekend.

The Silverado Trail, a county road paralleling Highway 29 on the east side of the Valley, carries considerably less traffic than Highway 29, although its capacity is comparable. Still, only approximately 28 percent of the total traffic using the two north-south Highways travels on the Silverado Trail during a typical summer weekend day, up slightly from 25 percent recorded in 1979. Visitors to the Napa Valley arriving via air travel can arrive either at the San Francisco International Airport, which is approximately 50 miles south, or the Oakland International Airport, which is 70 miles south. The Napa County Airport, located in southern Napa, south of the subject, has only charter or private airplane flights available.

Local Area Characteristics

Tourism

Visit Napa Valley (VNV) estimates approximately 3.5 million visitors visited the Napa Valley in 2016 (when the last Napa Valley visitor profile was conducted). That's an increase of 6.3 percent increase from 2014. Approximately 64.5 percent of these visitors spent one day in the Valley while 35.5 percent of visitors stayed overnight. Annual visitor spending is estimated at approximately $1.92 billion, an increase of 17.5 percent since 2014, with visitor spending at $1.63 billion. Officials suggest that a survey of tourists indicated that the primary reason for visiting the valley was for leisure purposes (a weekend getaway or vacation), representing 77.3 percent of all visitors. Second in that survey was for business travel, representing 7.9 percent, and 6.3 percent for personal travel and wedding, or special events. The tourism survey further indicated that the majority of the tourist traffic in Napa Valley emanates

from the greater San Francisco Bay Area. Approximately 20.8 percent of the visitors represent international travelers. It is reported that visitors to the Napa Valley tend to visit multiple towns within the area, and in 2016, 50.2 percent of all visitors made it to the St. Helena area.

The Napa Valley does not have a central convention or conference center; however, many of the hotels have meeting space available for small groups, with the largest at the Meritage Resort & Spa, Silverado Country Club and Resort, Embassy Suites, and the Marriott Hotel. According to the VNV, there were more than 3,500 conferences annually in the Napa Valley in recent years. To assist with tourism development and information disbursement, VNV has an information office at the welcome centers in central Napa, which handles an estimated 140,000 visitors annually.

Activities and services offered to the visitors are the expansion of visitor services such as new restaurants, glider plane rides, hot air balloon rides, and older attractions such as the Lake Berryessa recreational area, the mineral springs and mud baths, museums, antique and art stores, and various sport activities including golf. There are a number of special community events during the year, some of which include the Napa Valley Wine Auction, the Robert Mondavi Summer Jazz Festival, the Napa Valley Film Festival, and the Napa Valley Marathon.

Viticulture

Approximately 45,300 acres of land in Napa Valley are planted with grapevines of varying grape varietals, representing approximately four percent of the total wine production in California. The demographics of the region show 700 grape growers and that 95 percent of the appellation's wineries are family owned. The Napa Valley Vintners association has 540 members, of which 80 percent produce fewer than 10,000 cases annually. Approximately 65 percent produce fewer than 5,000 cases annually.

According to the United States Department of Agriculture, National Agricultural Statistical Service's 2016 Grape Crush Report (the most recent report available), California's 2016 crush totaled approximately 4.23 million tons, up 9.3 percent from the 2015 crush of 3.89 million tons. Red wine varieties accounted for the biggest share of all grapes crushed at 2.28 million tons, and white wine varieties totaled 1.75 million tons, according to the 2016 final wine grape crush report. The average price for the 2016 crop of red wine grapes was $918, up 16.3 percent from 2015. The average price for white wine grapes came in at $598, up 10.7 percent from 2015. The economic impact of the wine industry in Napa, as reported by Napa Valley Vintners, provides an annual economic impact of more than $13 billion locally.

We understand that since 1997, due to the recent increase in grape production and annual returns, there has been a growing interest in vineyard expansions and new vineyards in the area. However, according to the Napa Valley Vintners Association, only about three percent of the total land area in Napa County is available to develop as vineyards, which has resulted in a significant appreciation of vineyard land in recent years.

North Coast Fires

In November 2017, the Wine Institute reported that the October wildfires in the North Coast wine communities were not significantly affected, as 90 percent of Napa, and 85 percent of Mendocino's harvests were already picked and in production at wineries prior to the fires.

San Francisco, Oakland, and Sacramento International Airports

San Francisco International Airport (SFO) is located approximately 70.2 miles south of Napa Valley, between the cities of South San Francisco and Millbrae. Oakland International Airport (OAK) is located roughly 66.5 miles south of Napa Valley, west of San Francisco, across the San Francisco Bay, and the Sacramento International Airport

(SAC) is located about 71.3 miles northeast of Napa Valley. The following chart illustrates historical passenger traffic at the airports since 2004.

San Francisco, Oakland and Sacramento International Airports

	SFO		OAK		SAC		Total	
Year	Pax Traffic	% Change	Pax Traffic	% Change	Pax Traffic	% Change	Pax Traffic	% Change
2004	17,183,331	----	14,098,327	----	9,580,722	----	40,862,380	----
2005	33,395,737	94.3 %	14,417,575	2.3 %	10,203,066	6.5 %	58,016,378	42.0 %
2006	33,574,807	0.5	14,433,669	0.1	10,362,800	1.6	58,371,276	0.6
2007	35,790,835	6.6	14,613,489	1.2	10,767,639	3.9	61,171,963	4.8
2008	37,402,455	4.5	11,474,456	(21.5)	10,202,953	(5.2)	59,079,864	(3.4)
2009	37,453,634	0.1	9,505,281	(17.2)	9,112,277	(10.7)	56,071,192	(5.1)
2010	39,391,234	5.2	9,542,333	0.4	9,047,775	(0.7)	57,981,342	3.4
2011	41,045,431	4.2	9,266,570	(2.9)	8,929,289	(1.3)	59,241,290	2.2
2012	44,477,209	8.4	10,040,864	8.4	8,910,570	(0.2)	63,428,643	7.1
2013	45,011,764	1.2	9,742,887	(3.0)	8,685,368	(2.5)	63,440,019	0.0
2014	47,155,100	4.8	10,336,778	6.1	8,972,756	3.3	66,464,634	4.8
2015	50,067,094	6.2	11,205,063	8.4	9,609,880	7.1	70,882,037	6.6
2016	53,110,671	6.1	12,070,967	7.7	10,118,794	5.3	75,300,432	6.2
2017	55,832,518	5.1	13,072,245	8.3	10,912,079	7.8	79,816,842	6.0
Avg. Annual % Change		9.5 %		(0.6) %		1.0 %		5.3 %

Source: San Francisco International Airport; Oakland International Airport; Sacramento International Airport

Air travel in 2009 was affected by the recession and the downturn of the economy that began in 2008. However, after two short years, air travel at the San Francisco Airport had completely recovered, but the Oakland and Sacramento airports struggled, reporting a decline of 3.0 percent, and 2.5 percent, respectively, in 2013.

Every year since 2014, the airports have reported positive passenger counts, and year-end 2017 figures show increases of 5.1 percent, 8.3 percent, and 7.8 percent, respectively. The recovery of the market and increase in total passengers to the Bay Area bodes well for the local hotel market.

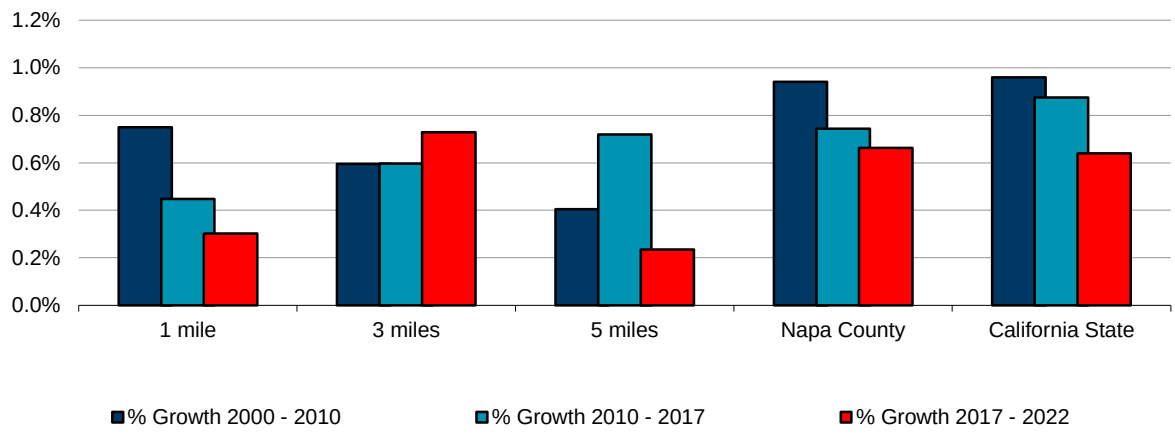
Local Demographics

The following discussion is based upon an Experian Marketing Solutions, Inc. demographic study for a one, three, and five-mile radius of the Napa Valley. To add perspective, we have included data for Napa, Napa County, and the state of California.

Population

Population in 2017 within a one, three, and five-mile radius of the Napa Valley has been estimated at 5,519, 39,046, and 84,379 residents, respectively. The following chart contains both historical estimates and future expectancies in terms of local compounded population growth.

Population Growth (Compounded)

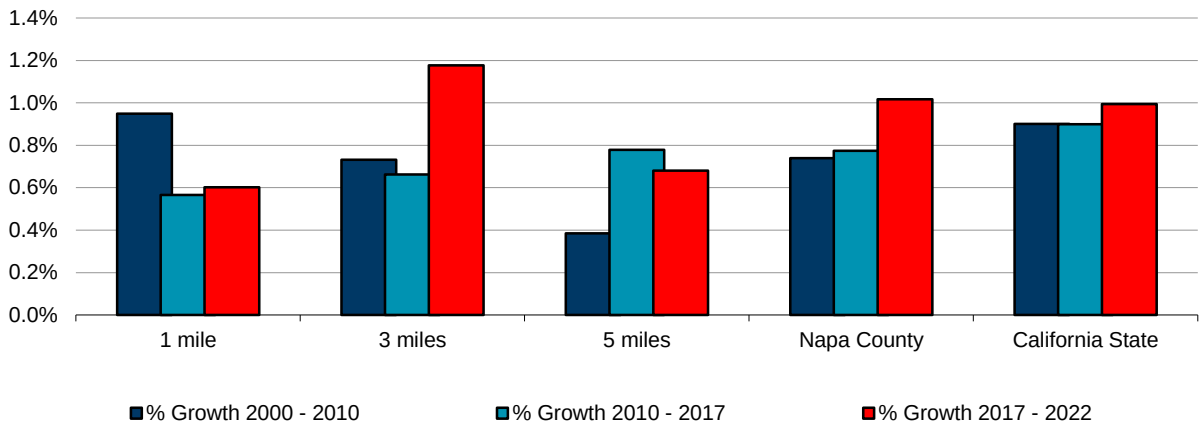


Population statistics for a one-mile radius show that between 2010 and 2017, population increased at a compound annual rate of approximately 0.4 percent, slower than the growth rates experienced by Napa County, and the state of California of 0.7 percent, and 0.9 percent, respectively. Through 2022, the population within the Napa Valley's one-mile area is expected to increase at a compound rate of 0.3 percent, while the county is expected to experience growth rates of 0.7 percent, and the state of 0.6 percent. Overall, the immediate area is expected to experience moderate growth levels.

Households

A household consists of all the people occupying a single housing unit. While individual members of a household purchase goods and services, these purchases actually reflect household needs and decisions and levels of disposable income. Thus, the household (and subsequently income) is one of the critical units to be considered when reviewing market data and forming conclusions about the demographic impact on existing and proposed facilities.

Household Growth (Compounded)

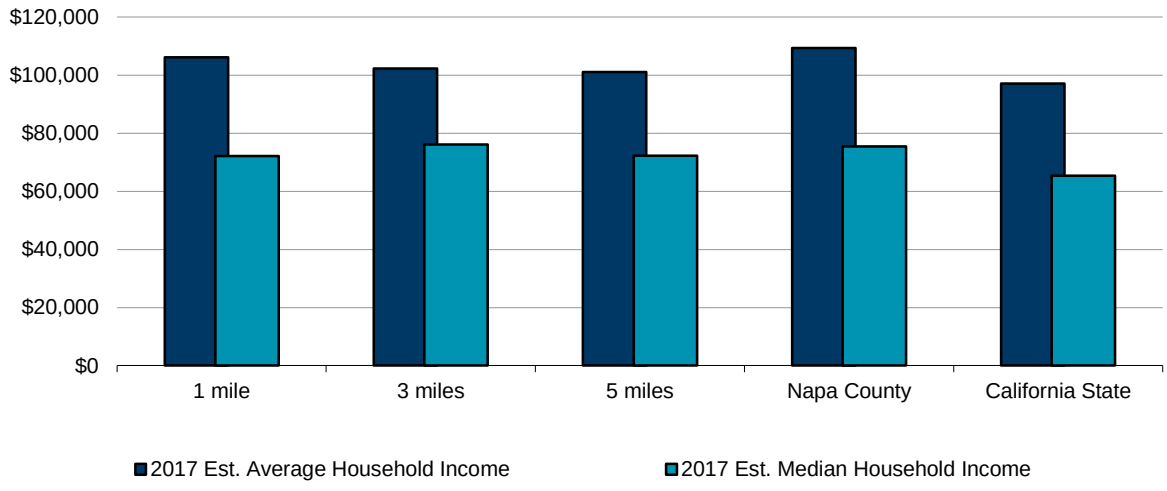


According to Experian, household formation has occurred over the last seven years at a 0.6 percent compound rate of growth within the Napa Valley's one-mile area. Between 2017 and 2022, households within this area are expected to grow at the same pace of 0.6 percent per year. As shown in the preceding chart, household growth in Napa County, and the state of California are expected to achieve faster growth rates to the local area of 1.0 percent, and 1.0 percent, respectively.

Income

Income levels in a trade area reflect the potential expenditures of the residents; thus forming an important component of trade area analysis. In other words, average household income times the number of households yields one significant measure of an area's retail sales potential.

Income



According to Experian, average household income within a one-mile radius is $106,221, which is in line with the county level, and greater than the state level of $109,364, and $97,218, respectively. Approximately 18.2 percent of the population over the age of 25 within the Napa Valley's one-mile radius has a Bachelor's Degree versus 20.4 percent in the county. Additionally, 4.5 percent of residents within the Napa Valley's one-mile radius have a Master's Degree and roughly 6.7 percent of Napa County residents have achieved the same.

Conclusion

As the economy rebounded from the last economic downturn, the Napa Valley economy benefited from its proximity to the San Francisco Bay Area, Silicon Valley, and Sacramento, which provide a strong base of transient leisure and group demand. The Napa Valley area benefits directly from economic stability of the Bay Area, its primary feeder market.

Overall, the world-renowned Napa Valley is a highly desirable, international tourist destination, offering attractions ranging from golf to viticulture and cultural festivities. Accordingly, we believe that local demographic and economic factors will continue to support the Napa Valley. Overall, the neighborhood represents good locational characteristics for area service businesses and lodging operations.

Classification of Lodging Facilities

The design, facilities, amenities, and service levels of lodging facilities are always evolving as hotel companies and developers respond to market trends. The shifts in demographics of hotel users from baby boomers to millennials and changing lifestyle trends are shaping the perception of hotel products and shifting the nomenclature to describe lodging. Hotels offerings are changing to appeal to different segments. Some of these changes are in the physical attributes while other changes are in the amenities and services.

Trends in the changing design of hotels include a renewed emphasis on public space. The return of the lobby as a social center is evident in the design and renovation of hotels at all price points and service levels. Comfortable seating, powerful WiFi, and readily available food and beverage at all hours are moving food service from traditional restaurant outlets to the lobby, and drawing guests from their rooms to these communal areas. Healthier food choices are being offered at all lodging price points. Hotel guests are seeking unique and local experiences and operators are offering more and more options for activity programing with options for group and individual classes, tours, tastings, and other events. While the trends point to the use of hotels as social hubs and more than just a place to spend the night, the general classifications of the lodging inventory in the Napa Valley remain generally consistent with the 2007 HVS Study.

We have four categories of lodging product in this study: Bed and Breakfasts/Small Inns (B&Bs), Limited- and Select-Service Hotel, Full-service Hotels, and Luxury Hotels and Resorts.

Bed and Breakfasts (B&Bs) – These are properties with typically fewer than 10 guestrooms, which are independently owned and operated (by the owners). These properties may have shared bathrooms. A continental or full hot breakfast is served and is usually included in the room rate. No meals are served to persons other than guests and residents. Bed- and-breakfast hotels generally cater to individuals and couples traveling for leisure purposes. B&Bs typically offer no meeting space and in the Napa Valley, usually in the 3 to 5 room range.

We have also included some independent small luxury inns in this category. These smaller independent and boutique hotels in Napa Valley also provide uniquely designed accommodations. The properties are generally owned and operated by individuals or small regional hotel management firms. These properties emphasize a personal experience, high service levels and more limited on-site meeting space facilities and other amenities. Generally these properties do not have a dedicated restaurant but often include an extensive breakfast offering as part of the room rate. These inns range from 12 to approximately 40 guestrooms. These inns may have a similar room count to a limited-service hotel but are more upscale or boutique in nature and support higher rates.

Limited-service Hotels – Depending on the age and affiliation of the property, limited-service hotels generally range from 30 to 160 rooms. Limited-Service hotels contain more than 10 guestrooms and may be more than one story in height. Food service, if any, consists of a market pantry. Guestrooms have private bathrooms. Public areas include a reception area and these properties may also have a pool and courtyard area. Meeting space may or may not be available. Many of the limited-service hotels offer a complimentary breakfast which can range from a continental offering to hot items. Limited-service hotels are typically owner-operated. Some are run as independent hotels while others are affiliated with brands such as Best Western, Hampton Inn, Motel 6, and American's Best Value Inn.

The inventory of limited-service hotels in the Napa Valley includes a wide range of properties that date from the 1950s to 2016. Properties include exterior older motel facilities and newer interior corridor branded prototype designs.

A subset of this group is Extended-stay hotels which are designed for patrons who use the guestrooms for longer periods (generally, at least one week in duration) and feature additional amenities such as a microwave, stovetop,

oven, and dishwasher. Extended-stay hotels typically offer a complimentary breakfast and evening reception. Discounts are usually afforded to patrons who stay for longer durations; however, it should be noted that Napa's transient occupancy tax is typically not applicable to guests staying more than 30 days.

Full-Service Hotels – These properties are larger hotels that provide a range of facilities and amenities for travelers. A restaurant and lounge is available and open for at least two meals daily. All guestrooms have an individual bathroom, and a variety of bed types and room layouts; suites are usually also available. Meeting space is also offered, and the hotel's kitchen will generally cater events that require food and beverage service. In the Napa Valley, these hotels usually have a swimming pool and fitness facilities. Full-Service hotel can also be independent or affiliated with a brand.

A subset of this group, select-service properties, typified by the Hilton Garden Inn and Courtyard by Marriott brands, offer some services. Select-service hotels have a café or bistro which, depending on local demand, may not offer service at all three meal periods and does not provide room service. These venues typically have a lounge area. Breakfast is available from the restaurant at an additional cost. Meeting space is generally limited, but most properties offer a business center and often guestrooms contain microwaves. Select-service hotels generally range in size from 90 to 150 rooms.

Luxury Hotels and Resorts- This classification is rather broad and often encompasses properties that would otherwise be classified as either full-service, boutique, or resort hotels. In the Napa Valley, all of the resort hotels are also considered the top-tier properties in terms of service, amenities, and quality of guestrooms. Resort hotels offer at least one full-service restaurant that is open for at least two meals daily and typically provides room service. Resort hotels also offer additional leisure amenities, above and beyond those that could be expected at typical full-service hotels; these amenities often include golf courses, tennis facilities, full-service spa, or multiple swimming pools. These properties are also typically in non-urban locations where ample recreational and leisure activities are readily accessible.

The lodging classifications are based on common product categories in the hotel industry based on sources including materials from Smith Travel Research (STR), development and marketing materials from hotel companies and brands, and our professional experiences.

Note that the lodging inventory in the Napa Valley represents a variety of product offerings and locations. In determining the allocation of each property, we have considered the physical facilities, amenities and services, and price point. It is important for an area to have viable lodging offerings at a range of price points. Part of the appeal of the Napa Valley as a destination is the variety of accommodations so that visitors of different means can participate in the experience. Some of the luxury hotels and resorts in the Napa lodging market are destinations in and of themselves.

We are of the same opinion expressed in the 2007 HVS study that well-maintained and safe older properties continue to provide a price-value option for less affluent travelers. While the majority of hotel guests in the Napa Valley are coming for purely leisure pursuits, hotels are important components of community activity and service local residents and their guests in times of both need and celebration. We believe that sustaining a range of lodging properties at different price tiers remains an important factor in success and perception of the hotel as part of the local community and economy.

Historical Occupancy and Rate Analysis

The basic measure of hotel performance, whether for an individual property or a market, is room revenue. Room revenue is analyzed by occupancy and average rate. Demand is represented by occupied room nights and supply is the number of available rooms, the ratio of demand to supply is occupancy. Average rate is the total revenue divided by the number of occupied rooms. For this study, these data points are generally considered on an annual basis, although it is important to consider the monthly trends and impact of seasonal patterns.

We have relied on data from Smith Travel Research (STR). STR, a data and analytics specialist is recognized by the lodging industry as the standard source of reliable data, provided operating statistics on the local market as a whole. In reviewing the data compiled by STR, it is important to note some of its limitations. We have found that because hotels are occasionally dropped in and out of STR samples, and not every property reports data in a consistent and timely manner, the overall quality of this information may be affected. These variables can sometimes skew the data for a particular market. However, we find that STR data is generally relied upon by typical hotel investors. Therefore, it has been considered in this study. The table shown below illustrates the combined operating statistics for the hotels in Napa Valley that report to STR. As not all hotels in Napa Valley report to STR, the number of reporting properties differs from the overall inventory identified in this study but serves as a reliable proxy for the market's performance.

Market Supply, Demand, Occupancy, ADR and RevPAR - Napa Valley

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2010	3,698	1,349,770	-----	818,972	-----	60.7%	-----	$226.48	-----	$137.42	-----
2011	3,724	1,359,334	0.7%	881,194	7.6%	64.8%	6.8%	$241.84	6.8%	$156.77	14.1%
2012	3,838	1,400,721	3.0%	937,641	6.4%	66.9%	3.3%	$255.04	5.5%	$170.73	8.9%
2013	3,867	1,411,384	0.8%	986,038	5.2%	69.9%	4.4%	$274.71	7.7%	$191.92	12.4%
2014	3,841	1,401,926	-0.7%	983,556	-0.3%	70.2%	0.4%	$289.31	5.3%	$202.97	5.8%
2015	3,956	1,444,068	3.0%	1,048,894	6.6%	72.6%	3.5%	$307.63	6.3%	$223.45	10.1%
2016	4,053	1,479,191	2.4%	1,075,211	2.5%	72.7%	0.1%	$324.61	5.5%	$235.95	5.6%
2017	4,162	1,518,987	2.7%	1,079,637	0.4%	71.1%	-2.2%	$322.88	-0.5%	$229.49	-2.7%
Avg Annual Percent Change			1.7%		4.0%		2.3%		5.2%		7.6%
Average 2010 to 2017	3,892	1,420,673		976,393		68.7%					
Average 2015 to 2017	4,057	1,480,749		1,067,914		72.1%					

Source: STR

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

Since 2010, most data for the Napa Valley lodging market indicates continued improvement with the exception of periods during 2014 and 2017 that were impacted by natural disasters. Since the great recession of 2008 and 2009, lodging has steadily recovered in both occupancy and average rate. In the last four years, occupancy has been generally stable reflecting the seasonal patterns of demand dictated by weather, travel trends, and annual wine industry and other scheduled events. Hotel guests and day trippers to Napa are primarily drawn from Northern California where the easy access supports visitation on the weekends and during vacation and holiday periods. As a result of a strong economy in recent years and the growth in venues in the Napa Valley, the hotel industry has flourished and new hotel supply has been readily absorbed.

Seasonal Demand Patterns

Annual statistics do not tell the whole story as the lodging market is highly seasonal as shown in the following charts. The highlighted ranges show the peak occupancy periods.

Napa Valley Hotel Market Seasonality

	Occupancy								Average Daily Rate							
Month	2010	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
January	37.4%	40.0%	43.5%	46.8%	48.2%	54.4%	56.1%	55.0%	$153.33	$163.54	$171.61	$182.13	$201.21	$216.14	$221.10	$229.11
February	45.2%	50.4%	54.8%	56.0%	58.7%	64.6%	65.5%	67.3%	$169.02	$181.28	$191.69	$201.69	$213.44	$236.02	$250.62	$253.43
March	52.8%	56.6%	59.3%	61.9%	66.3%	68.4%	67.9%	70.0%	$173.24	$188.93	$206.40	$216.59	$228.15	$244.11	$255.47	$273.25
April	60.7%	63.9%	66.9%	71.1%	74.2%	74.8%	75.3%	73.6%	$203.68	$222.66	$224.79	$248.20	$265.23	$285.72	$304.54	$309.57
May	66.8%	69.9%	70.7%	76.5%	77.3%	77.6%	76.1%	78.1%	$234.63	$250.69	$258.75	$289.72	$305.36	$336.05	$348.90	$367.80
June	67.9%	71.5%	77.8%	76.5%	77.9%	75.6%	77.9%	78.6%	$236.64	$253.12	$269.97	$289.98	$309.03	$330.87	$343.35	$359.25
July	73.9%	77.7%	79.2%	80.9%	80.1%	79.5%	81.2%	80.1%	$238.89	$265.52	$270.53	$293.63	$316.24	$339.75	$356.02	$366.01
August	74.2%	81.4%	80.3%	84.2%	79.0%	82.1%	79.0%	78.6%	$253.39	$263.41	$289.61	$318.44	$337.90	$344.65	$359.78	$371.10
September	75.8%	82.5%	82.4%	83.2%	80.0%	83.6%	84.9%	83.0%	$268.94	$290.55	$304.18	$331.16	$346.94	$369.96	$396.35	$414.44
October	77.2%	79.2%	81.0%	82.4%	80.5%	85.3%	82.8%	63.1%	$277.87	$288.77	$307.26	$331.62	$352.72	$379.16	$396.10	$317.18
November	55.5%	60.0%	62.0%	70.8%	69.3%	69.4%	70.0%	68.4%	$221.51	$233.95	$249.30	$266.45	$278.27	$290.36	$315.53	$289.69
December	39.5%	43.7%	43.1%	47.2%	50.8%	55.8%	54.7%	57.9%	$183.30	$193.84	$206.79	$216.64	$225.17	$228.68	$256.28	$247.41
Full Year Avg.	**60.7%**	**64.8%**	**66.9%**	**69.9%**	**70.2%**	**72.6%**	**72.7%**	**71.1%**	**$226.48**	**$241.84**	**$255.04**	**$274.71**	**$289.31**	**$307.63**	**$324.61**	**$322.88**

Napa Valley Hotel Market Seasonality

	Demand								Average Daily Rate							
Month	2010	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
January	-----	6.8%	9.5%	11.7%	2.3%	16.2%	3.1%	0.9%	-----	6.7%	4.9%	6.1%	10.5%	7.4%	2.3%	3.6%
February	-----	12.4%	8.7%	6.0%	4.2%	13.2%	1.4%	5.7%	-----	7.3%	5.7%	5.2%	5.8%	10.6%	6.2%	1.1%
March	-----	7.9%	4.8%	8.3%	6.4%	6.1%	2.3%	4.8%	-----	9.1%	9.2%	4.9%	5.3%	7.0%	4.7%	7.0%
April	-----	6.0%	4.8%	10.2%	3.7%	3.9%	3.5%	-0.6%	-----	9.3%	1.0%	10.4%	6.9%	7.7%	6.6%	1.7%
May	-----	5.4%	5.6%	7.5%	0.5%	3.3%	0.8%	4.3%	-----	6.8%	3.2%	12.0%	5.4%	10.0%	3.8%	5.4%
June	-----	6.2%	13.6%	-2.3%	1.4%	-0.1%	6.0%	2.5%	-----	7.0%	6.7%	7.4%	6.6%	7.1%	3.8%	4.6%
July	-----	6.0%	6.5%	1.4%	-1.5%	2.2%	5.1%	0.3%	-----	11.1%	1.9%	8.5%	7.7%	7.4%	4.8%	2.8%
August	-----	10.5%	3.0%	4.2%	-6.7%	7.0%	-1.0%	1.2%	-----	4.0%	9.9%	10.0%	6.1%	2.0%	4.4%	3.1%
September	-----	9.7%	4.3%	0.5%	-7.2%	10.6%	4.5%	-0.6%	-----	8.0%	4.7%	8.9%	4.8%	6.6%	7.1%	4.6%
October	-----	3.4%	6.8%	1.3%	-3.7%	9.7%	-0.1%	-22.3%	-----	3.9%	6.4%	7.9%	6.4%	7.5%	4.5%	-19.9%
November	-----	9.0%	7.9%	13.7%	-3.5%	3.8%	3.8%	3.8%	-----	5.6%	6.6%	6.9%	4.4%	4.3%	8.7%	-8.2%
December	-----	11.6%	2.8%	8.5%	10.6%	9.8%	0.8%	12.5%	-----	5.8%	6.7%	4.8%	3.9%	1.6%	12.1%	-3.5%
Full Year Avg.		**7.6%**	**6.4%**	**5.2%**	**-0.3%**	**6.6%**	**2.5%**	**0.4%**		**6.8%**	**5.5%**	**7.7%**	**5.3%**	**6.3%**	**5.5%**	**-0.5%**

Hotel demand in the Napa Valley is strongest on the weekends and in the summer when occupancies can exceed 80 percent. With the exception of 2014, which was impacted by the earthquake and the fall of 2017 when the fires occurred, demand has increased almost every month for the last seven years. With strong occupancy level and relatively little demand, operators have been able to progressively increase rates. The 5.2 percent compound annual growth rate from 2010 to 2017 well exceeded annual inflation. Overall the rate increase during this period was over 42 percent with RevPAR increasing 67 percent. These trends bode well for the continued strength of the market and the ability to absorb new lodging.

Lodging Supply

Using data from STR, publicly available information, Visit Napa Valley, individual property and brand web sites, and data from our in-house files, we have compiled a list of lodging facilities in the Napa Valley. As of December 31, 2017, we have accounted for 5,074 rooms in all categories. This represents a difference of 1,095 guestrooms or an approximately 28.5 percent in available inventory from the 3,979 guestrooms noted in the 2007 HVS study. As with the 2007 HVS study, it should be noted that the actual number of hotel rooms available at any particular time can differ due to renovations, expansions, or temporary and permanent closures. Based on our research, 902 new rooms in hotels and resorts have opened since 2007. The net difference of 193 rooms can be attributed to a number of factors and is likely to be due to the challenges of tracking B&B inventory which can be especially challenging. The operations and inventory of this segment has the least consistency, as these properties open and close with some frequency and are sometime purchased to be converted to residences. They may also report fluctuating number of available rooms and may or may not be accepting reservations for every day of the year. In addition, the room inventory of the Dolce Silverado Resort has fluctuated from year to year as the individual unit owner contributions to inventory affect the count. Overall the difference of 193 rooms is not considered material to the analysis and findings of this report.

Also note that rounding in the models can affect the total number of rooms in any particular category by one digit and is also not material to the analysis.

A list of properties considered in the Napa Valley inventory for this study is included in the addenda to the report.

Based on our findings, the following charts summarize the current distribution of lodging inventory in the Napa Valley. Those hotels located with the incorporated city of Napa are also shown.

Napa Valley Existing Lodging Supply - as of December 2017

Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	75	60%	675	13%
Limited Service Hotels	27	22%	1,521	30%
Full Service Hotel	11	9%	1,907	38%
Luxury Hotels & Resorts	12	10%	972	19%
Totals	125	100%	5,074	100%

City of Napa Existing Lodging Supply -as of December 2017

Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	23	51%	251	10%
Limited Service Hotels	13	29%	731	30%
Full Service Hotel	9	20%	1,435	59%
Luxury Hotels & Resorts	0	0%	-	0%
Totals	45	100%	2,417	100%

The majority of guestrooms by property type for both the county and the city are in full-service hotels, although combined all other segments provide a greater amount of inventory in the county and a less number in the city. As a comparison, the following chart shows the comparison of the Napa Valley inventory calculated in this study to the 2007 data.

Napa Valley Existing Lodging Supply

	Current Inventory				Inventory from the 2007 Study			
Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast and Small Inns	75	60%	675	13%	93	62%	503	10%
Limited Service Hotels	27	22%	1,521	30%	17	11%	1,068	21%
Full Service Hotel	11	9%	1,907	38%	6	4%	1,193	24%
Luxury Hotels & Resorts	12	10%	972	19%	33	22%	1,215	24%
Totals	125	100%	5,074	100%	149	100%	3,979	78%

Historic Supply Changes

To show the historical supply characteristics of the Napa Valley hotel market, data from STR and our research is used to calculate the increase in hotel rooms since 2010. This data has some limitations as the hotels and number of rooms reported to STR may not be consistent from period to period. In addition, over 10 percent of the lodging rooms in the Napa Valley are contained in B&Bs. These facilities are difficult to track as only a few report to STR, while others operate and offer nightly accommodations based on the interest of particular owners. The data is presented as a general benchmark and does not directly correspond to the inventory considered in the Cushman & Wakefield analysis as it does not include hotels which do not report and/or B&Bs and Small Inns not tracked by STR. We have also included partial room inventory for those properties that opened during 2017 with the remainder of their room counts included in 2018.

Historical Lodging Inventory - Number of Rooms as reporting to STR												
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**
American Canyon	248	0	101	0	0	0	0	0	0	0	0	349
Calistoga	667	0	0	0	0	0	0	0	0	0	0	667
Napa	1,832	180	141	0	0	165	0	41	-5	115	46	2,515
Rutherford	136	0	0	0	0	0	0	0	0	0	0	136
St. Helena	251	0	0	0	0	0	0	0	0	0	51	302
Yountville	298	0	82	0	0	0	0	0	0	0	0	380
Unincorporated	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,432	180	324	0	0	165	0	41	-5	115	97	4,349
Napa County												
Cumulative Totals	3,432	3,612	3,936	3,936	3,936	4,101	4,101	4,142	4,137	4,252	4,349	
Percent Change		5%	9%	0%	0%	4%	0%	1%	0%	3%	2%	
Cumulative Increase		5%	15%	15%	15%	19%	19%	21%	21%	24%	27%	
City of Napa	1,832	2,012	2,153	2,153	2,153	2,318	2,318	2,359	2,354	2,469	2,515	
Percent Change		10%	7%	0%	0%	8%	0%	2%	0%	5%	2%	
Cumulative Increase		10%	18%	18%	18%	27%	27%	29%	28%	35%	37%	
City as % of County		56%	55%	55%	55%	57%	57%	57%	57%	58%	58%	
Note 2017 new supply represent partial year openings												

Based on the data presented in the chart above, the county and city of Napa have experienced sporadic but notable supply growth. As expected, the majority of new rooms opened in the city of Napa. This historical period was negatively impacted by the great recession which hampered hotel performance from 2008 to 2010. As a result of the contraction of hotel revenues during the years, wary lenders constrained financing for new construction and some expected developments were postponed or abandoned. Combined with the challenging entitlement process, the lack of available sites, and the increasing cost of construction, new hotel openings over the last 10 years have been relatively limited. Note that this data reflects data reported to STR and differs from the inventories used in the forecasts.

Future Supply Changes

Napa remains an attractive hotel destination sought after by developers. Challenges in the availability of suitable lodging sites, the entitlement process and escalating construction costs have served as effective dampers limiting the growth of new supply. We have identified proposed lodging projects in the Napa Valley using data from public agencies, interviews and work with market participants, and a search of publicly available data. These projects have been assessed as to the date of their potential completion. We have also categorized other projects as more speculative at this time.

Tracking new hotel development is a moving target. While some information is publicly available, the intricacies of each transaction, the ownership and financing structure, development costs, and timing, are often confidential. We have reviewed the current pipeline of proposed projects with a number of sources and estimated opening dates assuming optimal development conditions, available financing, and future market conditions as anticipated at this time.

It is very possible that the expectations of new supply set forth in this study materialize different than the forecasts. As evidenced by the already long development process of some of the proposed supply, changes in market conditions, construction costs, ownership, management, and financing can unexpectedly impact the timing of new hotel development. Also note that information regarding new lodging development was conducted through early-January 2018 and is believed to be reliable as of that time.

The following chart includes the properties considered as likely new supply in the next few years sorted by estimated opening date. The opening dates were estimated based on available information at the time of our research in order to reasonably forecast supply and demand of lodging in the market. The completion of any particular projects may or may not correspond to these dates. Other projects may also materialize which are not on this list. While we have taken reasonable steps to determine the potential of new supply within the market, it is impossible to determine every property that will be developed in the future, or what their impact in the market will be.

Proposed Hotel Supply Napa Valley

Name	City	Type	Number of Rooms	Meeting Space (SF)	Status	Estimated Opening Date
Archer Hotel	Napa	Full Service	137		Remaining Rooms	January 1, 2018
Los Alcobas	St. Helena	Luxury	11		Remaining Rooms	January 1, 2018
Mendez Bed and Breakfast	Napa	B&B	3		Projects Under Construction	June 1, 2018
Finch House Annex, Blackbird Inn	Napa	B&B	4		Projects Under Construction	June 1, 2018
Coombs B&B	Napa	B&B	10		Projects Under Construction	June 1, 2018
Villagio Expansion	Yountville	Luxury	1	4,000	Projects Under Construction	June 1, 2018
Bardessono Expansion	Yountville	Luxury	3		Projects Under Construction	June 1, 2018
Meritage Expansion	Napa	Full Serivce	145	10,000	Projects Under Construction	August 1, 2018
Black Elk Inn	Napa	B&B	27		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	June 1, 2019
Four Seasons Calistoga	Calistoga	Luxury	83	7,540	Projects Under Construction	June 1, 2019
Milliken Creek Inn Expansion	Napa	B&B	16		Projects Approved/Construction Pending	January 1, 2020
1929 Bed & Breakfast Inn	Napa	B&B	7		Projects Approved/Construction Pending	January 1, 2020
Westin Expansion	Napa	Full Service	32		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2020
Cambria Hotel	Napa	Limited-Service	98	2,012	Projects Approved/Construction Pending	January 1, 2020
Rosewood Calistoga Hills	Calistoga	Luxury	110	4,464	Projects Under Construction	January 1, 2020
Hodge Hotel	Napa	B&B	10		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Eliza Yount Mansion Inn	Napa	B&B	25		Projects Approved/Construction Pending	January 1, 2021
Embassy Suites Addition	Napa	Full Service	54	4,045	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Franklin Station Post Office	Napa	Full Service	180	N/A	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
NV Wine Train Hotel	Napa	Full Service	148		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Napa River Inn Expansion	Napa	Limited-Service	26	3,000	Projects Approved/Construction Pending	January 1, 2021
Trinitas Planned Development	Napa	Limited-Service	250	1,500	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Ritz-Carlton Napa Valley	Napa	Luxury	351	21,100	Projects Approved/Construction Pending	January 1, 2022
Dwares Hotel Mixed Use Project	Napa	Limited-Service	108		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2022
Stanly Ranch	Napa	Luxury	132	15,500	Projects Approved/Construction Pending	January 1, 2022
Plenary Hotel Project	Napa	Full Service	275	10,000	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2022
First & Oxbow Pre-Application	Napa	Limited-Service	74		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2023
Montalcino Resort	Unincorporated	Luxury	379	34,000	Projects Approved/Construction Pending	Speculative
Silverado Trail Hotel	Napa	Limited-Service	98		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	Speculative
Widewaters Hotel	Napa	Full Service	140		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	Speculative
Hotel Condo Project	Napa	Luxury	84 to 124		Proposed - Speculative	Speculative
Adams Street RFP	St. Helena	Full Service	N/A		Proposed - Speculative	Speculative
Farmstead at Long Meadow Ranch	St. Helena	Luxury	50		Proposed - Speculative	Speculative
The Veranda	Calistoga	Luxury	170		Seeking Entitlements	Speculative
Downtown Main Street RFP	St. Helena	Full Service	N/A		Proposed - Speculative	Speculative
Watson Ranch Hotel	American Canyon	Full Service	200		Seeking Entitlements - Speculative	Speculative
Napa Pipe Hotel	Napa	Limited-Service	150		Proposed - Speculative	Speculative
French Laundry Inn	Yountville	Luxury	12		Proposed - Speculative	Speculative

Source: Cushman & Wakefield

The following charts set forth the distribution of proposed new rooms by location and type.

Napa Valley - Proposed Lodging Supply

Property Type	Number of Properties	% of Total	Number of Guestrooms	% of Total
Bed and Breakfast	8	30%	102	4%
Limited Service Hotels	5	19%	556	24%
Full Service Hotel	7	26%	971	42%
Luxury Hotels & Resorts	7	26%	691	30%
Totals	27	100%	2,321	100%

Excludes Speculative Devevelopment

Source: Cushman & Wakefield

City of Napa - Proposed Lodging Supply

Property Type	Number of Properties	% of Total	Guestrooms	% of Total
Bed and Breakfast	8	36%	102	5%
Limited Service Hotels	5	23%	556	26%
Full Service Hotel	7	32%	971	46%
Luxury Hotels & Resorts	2	9%	483	23%
Totals	22	100%	2,112	100%

Excludes Speculative Devevelopment

Source: Cushman & Wakefield

Over 3,500 hotel rooms are proposed for the Napa Valley, including those allocated in the charts above and more speculative projects. A number of these developments have been proposed for many years. Construction, particularly for the larger properties, has been elusive due to entitlement and market timing, and/or internal ownership factors. We have only considered proposed lodging in the pipeline that is anticipated to be complete in the next six years. Projects noted as speculative in the charts are not included in the analysis.

Projected Lodging Inventory - Number of Rooms by Location

Year	Existing	2018	2019	2020	2021	2022	2023	Additional Rooms
American Canyon	313	0	0	0	0	0	0	0
Calistoga	817	0	42	152	0	0	0	193
Napa	2,337	189	124	167	693	866	74	2,112
Rutherford	76	0	0	0	0	0	0	0
St. Helena	424	11	0	0	0	0	0	11
Yountville	453	2	2	0	0	0	0	4
Unincorporated	575	0	0	0	0	0	0	0
Total	4,994	203	167	318	693	866	74	2,321

We have prepared the following chart showing the potential increase in room supply, by city and for the Napa Valley market as a whole, by year for the next six years.

Projected Lodging Inventory - Number of Rooms by Property Type - Napa Valley

Year	Existing	2018	2019	2020	2021	2022	2023	Additional Rooms
B&Bs/Small Inns	675	9	22	37	35	0	0	102
Limited/Select Service	1,521	0	0	98	276	108	74	556
Full Service	1,907	181	102	32	382	275	0	971
Luxury Hotels and Resorts	972	13	44	152	0	483	0	691
Total	5,074	203	167	318	693	866	74	2,321

Projected Lodging Inventory - Number of Rooms by Property Type - City of Napa

Year	Existing	2018	2019	2020	2021	2022	2023	Additional Rooms
B&Bs/Small Inns	251	9	22	37	35	0	0	102
Limited/Select Service	731	0	0	98	276	108	74	556
Full Service	1,435	181	102	32	382	275	0	971
Luxury Hotels and Resorts	0	0	0	0	0	483	0	483
Total	2,417	189	124	167	693	866	74	2,112

Consistent with the recent hotel development trends, the majority of new hotel rooms are anticipated to open in the city of Napa relative to the county. A more favorable development process relative to other jurisdictions and the availability of developable sites are encouraging for new lodging supply in the city.

The following chart summarizes the new supply additions for the Napa Valley used in this analysis. Again we caution the reader that while we are including the projects that are deemed likely to happen, there is always a level of uncertainty associated with new hotel development and some of the projects may not materialize as anticipated.

Napa Valley Lodging Inventory by Property Type	Historical	2018	2019	2020	2021	2022	2023
Market Room Supply	5,074	5,277	5,444	5,762	6,453	7,319	7,395
% Change		4.0%	3.2%	5.8%	12.0%	13.4%	1.0%
Cumulative Change		4.0%	7.3%	13.6%	27.2%	44.2%	45.7%
By Product Type							
Bed & Breakfast							
Existing Rooms	675	675	675	675	675	675	675
Proposed Rooms		9	22	37	35	-	-
Total Rooms	675	684	706	742	777	777	777
% Change		1.3%	3.2%	5.2%	4.7%	0.0%	0.0%
Cumulative Change		1.3%	4.5%	9.9%	15.1%	15.1%	15.1%
Limited and Select Service							
Existing Rooms	1,521	1,521	1,521	1,521	1,521	1,521	1,521
Proposed Rooms		-	-	98	276	108	74
Total Rooms	1,521	1,521	1,521	1,619	1,895	2,003	2,077
% Change		0.0%	0.0%	6.4%	17.0%	5.7%	3.7%
Cumulative Change		0.0%	0.0%	6.4%	24.6%	31.7%	36.6%
Full Service							
Existing Rooms	1,907	1,907	1,907	1,907	1,907	1,907	1,907
Proposed Rooms		181	102	32	382	275	-
Total Rooms	1,907	2,088	2,189	2,221	2,603	2,878	2,878
% Change		9.5%	4.9%	1.5%	17.2%	10.6%	0.0%
Cumulative Change		9.5%	14.8%	16.5%	36.5%	50.9%	50.9%
Luxury and Resorts							
Existing Rooms	972	972	972	972	972	972	972
Proposed Rooms		13	44	152	-	483	-
Total Rooms	972	985	1,029	1,180	1,180	1,663	1,663
% Change		1.4%	4.4%	14.7%	0.0%	40.9%	0.0%
Cumulative Change		1.4%	5.8%	21.4%	21.4%	71.1%	71.1%

A number of other lodging projects also proposed for the market but as noted earlier, are considered speculative at time. In addition, there may be developments that are being considered but have not been publicly announced. Based on our research, we have included only projects with publicly available information in the analysis. Other future development or changes in the status and timeline of identified projects may change the premises of this analysis and the forecasts set forth in the study.

Demand Analysis and Forecast of Occupancy and Average Rate

Occupancy and Potential Demand Methodology

A hotel's ability to generate rooms revenue is determined by two operating statistics: annual occupancy and average daily room rate. In most markets, a room night analysis may be performed to quantify and forecast room night demand. The occupancy of a given hotel may be projected based on its relative competitiveness with other hotels and its penetration through the market. Individual lodging facilities may operate above or below the area-wide occupancy or average rate, depending upon the particular attributes of the property.

The projection of area-wide occupancy is derived from the relationship between estimated future room night demand and future guestroom supply. Annual growth rates for each market segment are applied to the estimated current year-end area-wide room night demand for each market segment to arrive at a projection of area-wide annual lodging demand as set forth in the table on the following page. As mentioned previously, based on our analysis of the local market for transient accommodations for the current year, we have projected varying growth rates in each of the market demand segments over the course of our projection through an estimated period of stabilization.

The analysis results in point values for each year. Even if market conditions were to occur exactly as expected, actual occupancy typically fluctuates. Market participants generally consider a range of two to five percent above or below the point value to be reasonable.

The stabilized occupancy is intended to reflect the anticipated results of the market over its remaining economic life, given any and all changes in the life cycles of the properties that comprise it. Thus, the stabilized occupancy excludes from consideration any abnormal relationship between supply and demand, as well as any nonrecurring conditions that may result in unusually high or low occupancies. Although the hotels in each classification may operate at occupancies above this stabilized level, we believe it equally possible for new competition and temporary economic downturns to force the occupancy below this selected point of stability.

The analysis also develops estimates of the potential for additional rooms in each segment. This potential was determined by calculating the additional annual room night demand that exceeds the forecasted annual occupied room nights. This projections involved the following steps:

1. The available rooms are estimated based on the existing supply and the addition of new rooms as they open.
2. The overall occupancy levels for the market are forecast considering the based and latent demand for the rooms.
3. A sustainable or stabilized occupancy level for the market is established using historical trends.
4. The difference between the sustainable occupancy and the forecasted occupancy is calculated and divided by 365 days to represent potential new supply that could be absorbed over time.
5. **Note that new lodging supply generally requires a ramp-up period to be absorbed. The occupancy forecasts account for this absorption. Negative potential demand is the transitional quantification of the absorption. Negative demand does not mean that too many new hotel rooms are being proposed. It means that the market typically requires one to three years to absorb new rooms of**

any particular project. All of the forecasts show that current levels of demand for hotel rooms in all segments in both geographies end up with positive capacity for additional rooms assuming all of non-speculative, proposed rooms in the existing pipeline open. It is important to understand that the absolute positive room numbers in the forecast are representative of the timing and potential for additional supply and not the specific number of future rooms that could be absorbed.

6. Particular products or locations may present opportunities for successful new lodging. For example, hotels affiliated with brands or with facilities that are not presently available in Napa or facilities such as a dedicated wellness facility could bring additional demand to the market that grows the pie. Lodging at lower price-points may also attract new demand to the area. The city and county of Napa may be able to support lodging beyond what is quantified in this analysis depending on the characteristics of the particular project.

7. The analyses of potential demand do not address the feasibility of new hotel supply. Land and construction costs and the availability and cost of financing are influential factors in the decision to pursue hotel development.

However, as a note of caution and as shown in the 2007 HVS study, the hotel market is cyclical and Napa is not immune to national and regional economic trends or other events that impact the demand for hotel rooms. This study assumes a continuation of the positive economic trends that have supported the strong hotel market performance of recent years.

The analysis is based on the identified existing and new supply as of the end of 2017. Any changes such as expansion, demolition, or delays in construction in the inventory will impact the analysis. Hotel operators and owners have resources to influence demand and occupancy through marketing and reservation channels. The relationship between occupancy and rate cannot be understated and changes to one of these variables can influence the other. Raising or discounting rates at any particular time can influence a hotel's annual occupancy performance and vice-versa.

Lodging Demand in the Napa Valley

The market for lodging accommodations is an all-encompassing term referring to the various types of travelers that utilize the lodging facilities in a given market area. The total number of rooms occupied by these travelers during a specific time frame represents a market's accommodated room night demand.

In analyzing demand (or occupied room nights) within a specific market, individual segments are considered based on the nature of travel present in the area. Three primary demand classifications occur in most markets including commercial, meeting and group, and leisure. With the dominance of the online booking portals as sources of reservations, it is challenging to accurately determine the purpose of travel and the influence on a hotel's segmentation and rate and occupancy. Based on our conversations with owners, operators, and other stakeholders in the Napa Valley lodging industry, we have used the transient demand segment to represent all overnight travelers. Transient demand also includes commercial (business) travelers, however the largest proportion of overnights guests to the Napa Valley are leisure tourists. Meeting and groups demand is included as a separate segment. This demand is predominantly captured by full-service and some luxury properties. Demand, which represents a nightly occupied guestroom, is considered and forecast on an annual basis.

Based upon our fieldwork and area analysis, we have estimated the distribution of accommodated hotel room night demand for the market as illustrated in the following table:

Historical Accommodated Demand: Napa Valley		
Market Segment	2017 Market-wide Accommodated Room Night Demand	Percent of Total
Transient	1,151,369	86.7%
Meeting and Group	176,453	13.3%
Total	1,327,822	100.0%

Transient Demand

Transient demand consists of individuals visiting the market and using hotels. Transient demand includes leisure and business travelers.

Tourism is a mainstay of Napa Valley and can be readily yielded by hotel operators. The Napa Valley is a regional, domestic, and global destination but primarily attracts visitors from California. Leisure demand is typically strongest Friday and Saturday nights, holiday periods, and during the summer and fall months. These peak periods generally are negatively correlated with meeting and group demand. Ease of highway access to the wineries, restaurants, and other attractions of the area are also important lodging locational considerations.

In the subject property's area, most leisure demand is generated by people who are taking advantage of the numerous wine- and food-oriented facilities, recreational opportunities, and tourist attractions available in the area. Recreational pursuits including ballooning, biking, and hiking are all readily accessible. These people are usually traveling as couples or in the summer, with families. The primary demand driver for all of Northern California's wine country is the residential population of Northern California. The market for transient demand has continued to benefit from the expansive growth of the local technology sector and San Francisco's continued strength in luring Pacific Rim visitors and investors.

Transient demand, particularly from leisure visitors to the Napa Valley, is expected to continue to remain strong. Napa is primarily a destination for regional residents, although demand from other US feeder markets and overseas continues to grow. As market occupancy climbs into the mid-70 percent range, capacity constraints will limit further growth due to the area's seasonal attractions.

Commercial travelers generally are not rate sensitive and represent a very desirable and lucrative market that provides a consistent level of demand at relatively high room rates. Commercial demand in the subject's market area is generated primarily by business travelers who seek the convenience of lodging close to the airport and by the wide variety of corporate tenants in the surrounding area. Hotels in the Napa Valley are used by business travel associated with the wine and leisure industries. Transient demand also includes some government demand. These sub-segments are selectively accommodated by individual properties in the competitive set.

Future transient demand is related to the overall economic health of the nation and the region's tourism industry. We have forecast demand by lodging type to remain generally consistent throughout the forecast period.

Meeting and Group Demand

Meeting and group demand includes groups who reserve blocks of rooms for meetings, seminars, trade association shows, and other similar gatherings of ten or more persons. Meeting and group demand is typically strongest during the spring and fall months, while the summer months represent the slowest period for this segment as hotels are

generally yielding stronger transient room rates. Meeting and group travelers typically achieve an average length of stay of two to three days. Historically, most corporate groups met on weekdays and social groups used the weekend periods. However, in the recent past, corporate group booking trends have changed to include some or all of the weekend and incorporate leisure activities in with business events.

Meeting and group demand is generally quite profitable for hotels and resorts. Although room rates are sometimes discounted for groups, the hotel benefits from the use of meeting space and the inclusion of in-house banquets and cocktail receptions. In order to attract the meeting and group segment, hotels must offer meeting and banquet facilities, as well as an adequate number of guestrooms to house function attendees.

Meeting and group demand in the Napa Valley is generated primarily by weddings, reunions, and corporate board meetings and retreats. Corporate meetings typically range in size from 15 to 100 people, whereas weddings typically range from 50 to 200 people. Most wineries are legally prohibited from hosting large events to the benefit of the hotels, and particularly the subject property due to its event facilities and size. Meeting and groups at the higher end of the size range are only able to be accommodated in a handful of existing hotels in the market, which generally are in the Full-Service product segment. And even though these hotels have facilities to accommodate larger groups, operators carefully consider the revenue potential of groups compared to individual guests, especially concerning room revenue.

Many of the hotels in the Napa Valley actively pursue small corporate groups, retreats, and board meetings, particularly mid-week. With 10 to 20 attendees, hotels can provide personal experience with a range of social and recreational activities. The amount of needed meeting space is more limited and can be found in a wider range of the lodging inventory. Weddings and social functions are also popular in the market and many lodging facilities host room blocks for guests while some have venues for the ceremonies and receptions.

Future demand potential in the meeting and group market segment is closely related to tourism activity in Napa Valley and the economic health of the region and nation. Napa continues to be a popular location for destination weddings. Many of the wineries are not permitted for events and hotels benefit from this constraint. In recent years, the market has seen the return of small corporate groups and retreats as the success of high technology firms in and around the Bay Area increases demand for meetings in Northern California Wine Country. The calendar of festivals and annual events also continues to grow. As such, we expect meeting and group demand to continue to improve, although limited by the amount of meeting space in the market and operator's expectations of yielding revenue during peak periods.

Latent Demand

Because the local market demand estimate is based on hotel occupancies, it considers only those hotel rooms that were utilized by guests. Latent demand accounts for guests who could not be accommodated by the existing competitive supply for a variety of reasons. Latent demand can be divided into displaced demand and induced demand.

Induced Demand

Induced demand is additional demand created by the existence of a new demand generator or the addition to the competitive supply of new lodging properties that feature specialized facilities designed to cater to a particular segment and attract demand that previously did not exist in the area, or increase the attraction of that demand.

A significant portion of the new supply will be affiliated with established global brands such as Four Seasons, Rosewood, Marriott, Hilton, and Choice. These projects launch reservation and marketing efforts well before construction is complete and the branded hotels are expected to open with significant occupied room nights already reserved. Members of the brands' reward programs are also attracted to the destination for point redemptions. The

marketing strength of these affiliations supports the expectation that these properties will be more readily absorbed in the market. For each segment, we have estimated that a portion of the demand for the proposed supply will be induced.

As most of the unaccommodated room nights are estimated to occur in the peak season, developers of new hotels would likely have to induce additional room nights during the slower demand periods to generate occupancy levels that support feasibility of new hotel construction.

Displaced Demand

Displaced demand refers to individuals who are unable to secure accommodations in the market because all the local hotels are full. These travelers must defer their trips, settle for less desirable accommodations, or stay in properties located outside of the market area. Because this demand did not yield occupied room nights, it is not included in the historical accommodated room night demand estimate.

Displaced demand is actually a form of excess demand, which results from the cyclical nature of the hotel business. For example, in commercial markets where demand is not equally spaced throughout the week, hotels often exhibit peaks and valleys in their daily occupancies. In general, commercial hotels enjoy strong occupancies Monday through Thursday (when business travel is most frequent) and significantly lower occupancies on Friday and Saturday. When hotels operating under these conditions realize annual occupancies of between 70 and 75 percent, or when day of the week demand patterns fill area hotels to capacity one or more nights per week, it can generally be assumed that excess demand exists, and a certain amount of patronage must be turned away. If additional lodging facilities are expected to enter the market, it is reasonable to assume that this displaced demand will be accommodated, and thus an estimate of the amount of displaced demand should be made. Displaced demand is generally estimated as a percentage of accommodated demand.

Displaced demand is included in the estimate of potential demand for each of the product segments. The amount of displaced demand is calculated by multiplying the number of annual high occupancy nights per year by the number of new available hotel rooms.

The methodology is illustrated in the following charts for B&B and Small Inns and was used for all the segments.

Because the overall occupancy of this segment in the subject's competitive is consistently strong during the summer and many weekends throughout the year, we believe that a certain amount of displaced demand exists in the market. It is understood that this demand typically is displaced. We have utilized an occupancy threshold of 75 percent to estimate the market's fill nights per month, as presented in the following chart. In 2017, the fires in the Napa and Sonoma Valleys significantly disrupted hotel performance in the fourth quarter. October and the beginning of November are typically periods that achieve occupancy levels in the mid-70 percent range and the displaced demand for these months has been estimated considering normal occupancy patterns.

Displaced Hotel Demand: B&Bs and Small Inns Napa Valley									
Occupancy (%)	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total Month	Fill Nights
Jan - 17	49.9	41.8	41.6	44.4	53.5	63.9	74.9	52.0	0
Feb - 17	55.4	53.3	57.8	54.5	63.8	74.3	81.6	62.9	3
Mar - 17	63.6	62.9	62.7	62.8	72.7	81.0	88.3	70.7	8
Apr - 17	55.1	54.6	56.9	63.8	73.5	82.8	84.4	67.5	8
May - 17	73.1	66.0	67.9	73.4	82.3	89.2	94.2	77.2	12
Jun - 17	66.0	67.1	67.5	69.8	77.9	84.9	90.4	75.2	12
Jul - 17	75.7	78.0	79.1	77.3	77.5	84.5	91.1	80.6	28
Aug - 17	77.0	77.4	77.0	78.9	79.6	89.1	93.4	81.4	28
Sep - 17	82.8	74.8	76.4	83.1	88.0	89.2	95.6	84.8	28
Oct - 17	49.4	29.8	31.0	34.9	40.6	48.2	51.3	40.4	28
Nov - 17	48.5	47.3	48.9	50.8	63.3	71.8	73.3	57.6	12
Dec - 17	56.1	47.1	52.0	53.7	57.6	63.9	75.1	58.6	4
Total Year	**62.3**	**58.1**	**59.6**	**62.7**	**69.6**	**77.2**	**83.2**	**67.5**	**171**

As calculated below, the potential displaced, or unaccommodated, demand was equal to 17,201 room nights over the past twelve months based on the utilized occupancy threshold of 75 percent

Current Displaced Demand Calculation		
New Competitive Supply:		103
Fill Nights:	x	171
Displaced Demand		**17,613**

Based on our calculation, there are roughly 107 fill nights and 103 new room inventory proposed for this segment, calculating to an estimated 17,613 unaccommodated room nights in 2017. During the course of our fieldwork and interviewing market participants at the competitive hotels, however, we understand that not all calculated displaced demand will actually be accommodated with the new supply. For this product type, all of the displaced demand is assumed to be driven by transient users. The displaced demand for the other product types is allocated to transient and meeting and group demand as currently accommodated by the existing properties.

Based on our market analysis with primary reliance on the fieldwork interviews and with secondary support from the data presented above, we have included 75% of the calculated displaced demand in the analysis for B&B and Small Inns as follows.

Displaced Demand Estimate - B&Bs and Small Inns Napa Valley						
2017 Market Segmentation	2017 Accommodated Demand	Estimated Displaced Room Nights	Displaced Percentage	Conversion Percent	Room Nights	Percentage Accommodated
Transient	58,714	17,613	30.0%	75%	13,210	22.5%
Percent Accommodated	**58,714**	**17,613**			**13,210**	**22.5%**

Bed and Breakfasts and Small Inns Occupancy Forecast

Developing projections for this subset of the market's lodging is the most difficult of all the market segments. The majority of the properties are owner-operated and most have three rooms or fewer. The availability of guestrooms at any particular time is at the owner's discretion. The owner-operators may or may not track occupancy with any regularity. To represent the performance of this segment, we have researched the number of available rooms in the category and used the data from a custom STR trend report as a proxy for the rate and occupancy levels. We also considered TOT reports from some of the cities in the Valley as general guides and reviewed publicly posted rates on numerous websites. Below is the data from the STR trend.

Market Supply, Demand, Occupancy, ADR and RevPAR

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2010	164	59,860	-----	35,766	-----	59.7%	-----	$246.08	-----	$147.03	-----
2011	164	59,738	-0.2%	39,108	9.3%	65.5%	9.6%	$265.09	7.7%	$173.54	18.0%
2012	163	59,495	-0.4%	40,495	3.5%	68.1%	4.0%	$264.19	-0.3%	$179.82	3.6%
2013	163	59,495	0.0%	42,154	4.1%	70.9%	4.1%	$286.15	8.3%	$202.74	12.7%
2014	164	59,709	0.4%	42,774	1.5%	71.6%	1.1%	$303.61	6.1%	$217.50	7.3%
2015	164	59,860	0.3%	45,132	5.5%	75.4%	5.2%	$303.51	0.0%	$228.83	5.2%
2016	164	59,860	0.0%	43,747	-3.1%	73.1%	-3.1%	$314.70	3.7%	$229.99	0.5%
2017	164	59,860	0.0%	41,356	-5.5%	69.1%	-5.5%	$338.00	7.4%	$233.52	1.5%
Avg Annual Percent Change			0.0%		2.1%		2.1%		4.6%		6.8%
Average 2010 to 2017	*164*	*59,735*		*41,317*		*69.2%*					
Average 2015 to 2017	*164*	*59,860*		*44,440*		*74.2%*					

Source: **STR**

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

From 2010 to 2017 occupancy levels increased dramatically. Rate growth was more erratic but overall revenue shows very strong growth. Our research indicates that the success of B&Bs generally tracks with the performance trends of the limited- and full-service hotels. The data from the TOT collections indicates, however, that the occupancy levels of this product type are higher in the county than in the city of Napa. This may be a function of the inconsistent data from these types of properties or other factors, such as the smaller size of properties in the Valley locations or the preference of visitors staying at B&Bs for more remote locations. While we have reasonably attempted to analyze and project the overall trends for this segment, the data for this segment is less reliable than for the other three lodging product types.

Our research indicates the following proposed new supply in this segment. As with all the proposed lodging projects, the opening was estimated based on available information and considering reasonable construction periods. Demand in this segment is anticipated to grow with the proposed hotels shown in the following chart.

Bed and Breakfasts and Small Inn - Proposed Hotel Supply Napa Valley

Name	City	Type	Number of Rooms	Status	Estimated Opening Date
Mendez Bed and Breakfast	Napa	B&B	3	Projects Under Construction	June 1, 2018
Finch House Annex, Blackbird Inn	Napa	B&B	4	Projects Under Construction	June 1, 2018
Coombs B&B	Napa	B&B	10	Projects Under Construction	June 1, 2018
Black Elk Inn	Napa	B&B	27	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	June 1, 2019
Milliken Creek Inn Expansion	Napa	B&B	16	Projects Approved/Construction Pending	January 1, 2020
1929 Bed & Breakfast Inn	Napa	B&B	7	Projects Approved/Construction Pending	January 1, 2020
Hodge Hotel	Napa	B&B	10	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Eliza Yount Mansion Inn	Napa	B&B	25	Projects Approved/Construction Pending	January 1, 2021

Source: Cushman & Wakefield

The forecast of occupancy was developed considering the new supply and the estimates of base and latent demand for this product type and location as shown in the following chart.

B&Bs - Napa Valley - Projection of Base Room Night Demand and Annual Growth						
Segment	**Historical**	**2018**	**2019**	**2020**	**2021**	**2022**
Transient						
Annual Growth		1.0%	1.0%	1.0%	1.0%	1.0%
Base Demand	170,215	171,917	173,636	175,372	177,126	178,897
Displaced Demand	-----	1,075	3,961	8,775	13,425	13,559
Total Market Demand	170,215	172,992	177,597	184,147	190,551	192,456
% Change	----	1.6%	2.7%	3.7%	3.5%	1.0%
Market Statistics						
Total Rooms Supply	675	684	706	743	778	778
Total Available Room Nights	246,375	249,478	257,690	271,195	283,970	283,970
% Change	----	1.3%	3.3%	5.2%	4.7%	0.0%
Market-wide Occupancy	**69.1%**	**69.3%**	**68.9%**	**67.9%**	**67.1%**	**67.8%**

Potential Demand

Using the methodology described earlier, the estimated potential demand for this segment is shown in the following chart.

Bed & Breakfast and Small Inns - Estimate of Additional Capacity - Napa County											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	675	684	706	743	778	778	778	778	778	778	778
Estimated Available Annual Room Nights	246,375	249,478	257,690	271,195	283,970	283,970	283,970	283,970	283,970	283,970	283,970
Total Projected Potential Demand	170,215	172,992	177,597	184,147	190,551	192,456	194,381	196,325	198,288	200,271	202,274
Estimated Sustainable Annual Occupancy	69%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
Estimated Sustainable Annual Demand		169,645	175,229	184,413	193,100	193,100	193,100	193,100	193,100	193,100	193,100
Total Projected Potential Demand		172,992	177,597	184,147	190,551	192,456	194,381	196,325	198,288	200,271	202,274
less Est. Sustainable Annual Demand		169,645	175,229	184,413	193,100	193,100	193,100	193,100	193,100	193,100	193,100
Unsatisfied Annual Demand		3,348	2,368	(265)	(2,549)	(644)	1,281	3,225	5,188	7,171	9,174
Cumulative Potential Supply Expansion		**9**	**6**	**(1)**	**(7)**	**(2)**	**4**	**9**	**14**	**20**	**25**

Forecast of Average Rate

One of the most important considerations in developing an estimate of the value of a lodging facility is a supportable projection of its attainable average rate, which is more formally defined as the average rate per occupied room. Average rate can be calculated by dividing the total rooms revenue achieved during a specified period by the number of rooms sold during the same period. The average rate and the anticipated occupancy percentage are used to project rooms revenue, which in turn provides the basis for developing an opinion of most other income and expense categories.

Although the average rate analysis presented here follows the occupancy projections, these two statistics are highly correlated; in reality, one cannot project occupancy without making specific assumptions regarding average rate. This relationship is best illustrated by RevPAR, which reflects a property's ability to maximize rooms revenue.

Our projections incorporate an opinion of general price inflation based upon economic projections from various sources (including the U.S. Congressional Budget Office), tempered by our observations and expectations derived from historical perspectives both locally and nationally. Accordingly, to portray price level changes, we have assumed an average CPI inflation rate of 3.0 percent per year throughout the 10-year projection period. This assumption is intended only to portray an expected long-term trend in price movements, rather than for a specific interval in time.

Bed & Breakfasts and Small Inns - Forecast of Average Rate

We have examined the rate structure and achieved average room rates and RevPARs of this product segment of the market, in forecasting marketwide average rate. The average rate data from the STR trend shows a compound average annual growth rate of 4.6 percent. The new supply is anticipated to be absorbed in the city of Napa while the majority of existing inventory is located in Up Valley. Based on the foregoing, the projection of the subject's average daily rate is illustrated in the following table.

B&B and Small Inns - Projected Base ADR Growth

Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$338.00
2018	4.0%	$351.52
2019	4.0%	$365.58
2020	4.0%	$380.21
2021	3.0%	$391.61
2022	3.0%	$403.36
2023	3.0%	$415.46
2024	3.0%	$427.93
2025	3.0%	$440.77
2026	3.0%	$453.99
2027	3.0%	$467.61

The operating performance of the subject hotel is projected in terms of annual guestroom occupancy and average daily room rate. Based on the previously concluded occupancy and average room rate, the subject’s room revenue

is projected as illustrated below. The performance is forecast through a stabilized year, after which the stabilized occupancy is assumed for the remaining years and the average rate increases are inflationary

B&Bs and Small Inns - Napa County -Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	9	31	68	103	103	103	103	103	103	103
Occupancy	69%	69%	68%	67%	68%	68%	68%	68%	68%	68%
Occupied Rooms	2,151	7,798	16,853	25,227	25,479	25,565	25,565	25,565	25,565	25,565
Existing Rooms Average Rate	$351.52	$365.58	$380.21	$391.61	$403.36	$415.46	$427.93	$440.77	$453.99	$467.61
Additional Rooms Rate Penetration	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Additional Rooms Rate	$351.52	$365.58	$380.21	$391.61	$403.36	$415.46	$427.93	$440.77	$453.99	$467.61
RevPAR	$243.75	$251.96	$258.17	$262.78	$273.37	$282.52	$290.99	$299.72	$308.71	$317.97
Rooms Revenue	$756,244	$2,850,887	$6,407,767	$9,879,327	$10,277,437	$10,621,160	$10,939,795	$11,267,989	$11,606,029	$11,954,209

B&Bs and Small Inns - Napa County -Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	684	706	743	778	778	778	778	778	778	778
Occupancy	69%	69%	68%	67%	68%	68%	68%	68%	68%	68%
Occupied Rooms	172,992	177,597	184,147	190,551	192,456	193,100	193,100	193,100	193,100	193,100
Averate Room Rate	$351.53	$365.59	$380.21	$391.61	$403.36	$415.47	$427.93	$440.77	$453.99	$467.61
RevPAR	$243.75	$251.96	$258.17	$262.78	$273.37	$282.52	$290.99	$299.72	$308.71	$317.97
Rooms Revenue	$60,811,244	$64,926,887	$70,014,767	$74,622,327	$77,629,437	$80,226,160	$82,632,795	$85,111,989	$87,665,029	$90,295,209

City of Napa Bed and Breakfasts and Small Inns – Forecasts of Rate and Occupancy

The methodology was used to forecast the performance of this segment for the properties located in the city of Napa. In developing this forecast, we have considered TOT data for the city and the findings from our research. The data indicates that the occupancy level of this product category is lower than for Up Valley properties and has an annual occupancy level of 64 percent compared to the county B&B level of 68 percent. The average rate is also estimated to be lower than the county. The new supply is anticipated to be able to garner higher rates than the existing supply, elevating the rates for the market.

The charts showing forecasts for the city of Napa are set forth below.

City of Napa Bed & Breakast and Small Inns Projection of Base Room Night Demand and Annual Growth								
Segment	**Historical**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Transient								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	58,714	60,476	62,290	64,159	66,084	68,067	70,109	72,212
Displaced Demand	-----	1,189	4,218	9,529	14,867	15,313	15,772	16,245
Total Segment Demand	58,714	61,665	66,508	73,688	80,951	83,380	85,881	88,457
Market Statistics								
Total Rooms Supply	251	260	282	319	354	354	354	354
Total Available Room Nights	91,615	94,900	102,930	116,435	129,210	129,210	129,210	129,210
% Change	----	3.6%	8.5%	13.1%	11.0%	0.0%	0.0%	0.0%
Market-wide Occupancy	**64.1%**	**65.0%**	**64.6%**	**63.3%**	**62.7%**	**64.5%**	**66.5%**	**68.5%**

B&Bs and Small Inns - Projected Base ADR Growth		
Year	**Projected ADR Growth**	**Projected ADR**
Positioned ADR	---	$285.00
2018	4.0%	$296.40
2019	4.0%	$308.26
2020	4.0%	$320.59
2021	3.0%	$330.20
2022	3.0%	$340.11
2023	3.0%	$350.31
2024	3.0%	$360.82
2025	3.0%	$371.65
2026	3.0%	$382.80
2027	3.0%	$394.28

The estimate of potential demand for this segment is forecast below followed by the estimated revenue contribution from the new supply and the overall room revenue projection for this segment within the city of Napa.

B&B Estimate of Additional Capacity - City of Napa	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	251	260	282	319	354	354	354	354	354	354	354
Estimated Available Annual Room Nights	91,615	94,900	102,930	116,435	129,210	129,210	129,210	129,210	129,210	129,210	129,210
Total Projected Potential Demand	58,714	61,665	66,508	73,688	80,951	83,380	85,881	88,457	91,110	93,843	96,658
Estimated Sustainable Annual Occupancy		64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
Estimated Sustainable Annual Demand		60,736	65,875	74,518	82,694	82,694	82,694	82,694	82,694	82,694	82,694
Total Projected Potential Demand		61,665	66,508	73,688	80,951	83,380	85,881	88,457	91,110	93,843	96,658
less Est. Sustainable Annual Demand		60,736	65,875	74,518	82,694	82,694	82,694	82,694	82,694	82,694	82,694
Unsatisfied Annual Demand		929	633	(830)	(1,743)	686	3,187	5,763	8,416	11,149	13,964
Cumulative Potential Supply Expansion		**3**	**2**	**(2)**	**(5)**	**2**	**9**	**16**	**23**	**31**	**38**

B&Bs and Small Inns - City of Napa - Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	9	31	68	103	103	103	103	103	103	103
Occupancy	65%	65%	63%	63%	65%	64%	64%	64%	64%	64%
Occupied Rooms	2,135	7,311	15,708	23,554	24,260	24,061	24,061	24,061	24,061	24,061
Existing Rooms Average Rate	$296.40	$308.26	$320.59	$330.20	$340.11	$350.31	$360.82	$371.65	$382.80	$394.28
Additional Rooms Rate Penetration	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Additional Rooms Rate	$326.04	$339.08	$352.64	$363.22	$374.12	$385.34	$396.90	$408.81	$421.08	$433.71
RevPAR	$211.86	$219.10	$223.18	$227.56	$241.42	$246.62	$254.02	$261.64	$269.49	$277.57
Rooms Revenue	$695,950	$2,479,074	$5,539,289	$8,555,216	$9,076,280	$9,271,698	$9,549,849	$9,836,345	$10,131,435	$10,435,378

B&Bs and Small Inns - City of Napa -Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	260	282	319	354	354	354	354	354	354	354
Occupancy	65%	65%	63%	63%	65%	64%	64%	64%	64%	64%
Occupied Rooms	61,665	66,508	73,688	80,951	83,380	82,694	82,694	82,694	82,694	82,694
Averate Room Rate	$297.43	$311.65	$327.42	$339.81	$350.00	$360.50	$371.32	$382.46	$393.94	$405.75
RevPAR	$193.27	$201.37	$207.22	$212.90	$225.86	$230.72	$237.64	$244.77	$252.12	$259.68
Rooms Revenue	$18,340,950	$20,727,074	$24,127,289	$27,508,216	$29,183,280	$29,811,698	$30,705,849	$31,627,345	$32,576,435	$33,553,378

Limited Service Hotel Properties

Limited-service Occupancy Forecast

Limited-service hotels include a wide range of properties in age and location. The hotels include older 30 room exterior corridor independent properties and new branded hotels with some meeting space. The high occupancy levels indicate some capacity constraint and supports the development of new supply in this segment. The limited-service segment represents the price-value product type in the market. Below is the data from the STR trend.

Market Supply, Demand, Occupancy, ADR and RevPAR - Limited Service Hotels

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2000	512	186,789	-----	141,720	-----	75.9%	-----	$124.77	-----	$94.66	-----
2001	579	211,335	11.6%	139,511	-1.6%	66.0%	-14.9%	$123.16	-1.3%	$81.30	-14.1%
2002	579	211,335	0.0%	145,052	3.8%	68.6%	3.8%	$124.64	1.2%	$85.55	5.2%
2003	579	211,335	0.0%	147,173	1.4%	69.6%	1.4%	$123.99	-0.5%	$86.35	0.9%
2004	633	230,935	8.5%	157,926	6.8%	68.4%	-1.8%	$125.16	0.9%	$85.59	-0.9%
2005	659	240,535	4.0%	158,935	0.6%	66.1%	-3.5%	$121.53	-3.0%	$80.30	-6.2%
2006	659	240,535	0.0%	167,884	5.3%	69.8%	5.3%	$130.74	7.0%	$91.25	13.6%
2007	659	240,535	0.0%	167,884	0.0%	69.8%	0.0%	$143.37	8.8%	$100.07	9.7%
2008	659	240,535	0.0%	160,842	-4.4%	66.9%	-4.4%	$155.85	8.0%	$104.22	4.1%
2009	844	307,941	21.9%	170,914	5.9%	55.5%	-20.5%	$144.16	-8.1%	$80.01	-23.2%
2010	860	313,900	1.9%	192,240	11.1%	61.2%	9.4%	$150.82	4.4%	$92.36	15.4%
2011	860	313,900	0.0%	199,600	3.7%	63.6%	3.7%	$148.01	-1.9%	$94.12	1.9%
2012	861	314,206	0.1%	207,091	3.6%	65.9%	3.5%	$151.19	2.1%	$99.65	5.9%
2013	860	313,900	-0.1%	221,047	6.3%	70.4%	6.4%	$163.98	7.8%	$115.48	15.9%
2014	861	314,265	0.1%	233,226	5.2%	74.2%	5.1%	$171.94	4.6%	$127.60	10.5%
2015	861	314,265	0.0%	238,308	2.1%	75.8%	2.1%	$182.13	5.6%	$138.11	8.2%
2016	957	349,455	10.1%	256,535	7.1%	73.4%	-3.3%	$192.15	5.2%	$141.06	2.1%
2017	976	356,240	1.9%	270,238	5.1%	75.9%	3.2%	$192.33	0.1%	$145.90	3.4%
Avg Annual Percent Change			0.7%		2.0%		1.3%		1.4%		2.6%
Average 2010 to 2017	887	323,766		227,286		70.2%			3.5%		
Average 2015 to 2017	931	339,987		255,027		75.0%			2.8%		

Source: **STR**

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

From 2010 to 2017 occupancy levels increased dramatically, even as new supply entered the market. The increased occupancy concurrent with the addition of new hotels shows the strength of the market. Rate growth was more erratic but overall revenue shows very strong growth. Limited-service hotels generate the highest occupancy levels in the area due to the price-value offering and affiliation of many of the properties with well-recognized brands. Demand in this segment is anticipated to grow with the proposed hotels shown in the following chart.

Proposed Hotel Supply Napa Valley - Limited-Service Hotels

Name	City	Type	Number of Rooms	Meeting Space (SF)	Status	Estimated Opening Date
Cambria Hotel	Napa	Limited-Service	98	2,012	Projects Approved/Construction Pending	January 1, 2020
Napa River Inn Expansion	Napa	Limited-Service	26	3,000	Projects Approved/Construction Pending	January 1, 2021
Trinitas Planned Development	Napa	Limited-Service	250	1,500	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Dwares Hotel Mixed Use Project	Napa	Limited-Service	108		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2022
First & Oxbow Pre-Application	Napa	Limited-Service	74		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2023
Silverado Trail Hotel	Napa	Limited-Service	98		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	Speculative
Napa Pipe Hotel	Napa	Limited-Service	150		Proposed - Speculative	Speculative

Source: Cushman & Wakefield

The forecast of occupancy was developed considering the new supply and the estimates of base and latent demand for this product type and location as shown in the following chart.

Projection of Base Room Night Demand and Annual Growth - Limited Service Hotels - Napa Valley								
Segment	**Historical**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Transient								
Annual Growth		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Base Demand	379,025	382,816	386,644	390,510	394,415	398,359	402,343	406,366
Displaced Demand	-----	0	0	12,677	48,732	63,601	74,100	74,841
Induced Demand	-----	0	0	5,233	19,917	25,737	29,688	29,688
Total Segment Demand	379,025	382,816	386,644	408,420	463,064	487,697	506,131	510,895
Meeting and Group								
Annual Growth		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Base Demand	42,114	42,535	42,960	43,390	43,824	44,262	44,705	45,152
Displaced Demand	-----	0	0	1,408	8,071	8,152	8,234	8,316
Induced Demand	-----	0	0	0	0	0	0	0
Total Segment Demand	42,114	42,535	42,960	44,798	51,895	52,414	52,939	53,468
Totals								
Transient	379,025	382,816	386,644	408,420	463,064	487,697	506,131	510,895
Meeting and Group	42,114	42,535	42,960	44,798	51,895	52,414	52,939	53,468
Total Market Demand	421,139	425,351	429,604	453,218	514,959	540,111	559,070	564,363
% Change	----	1.0%	1.0%	5.5%	13.6%	4.9%	3.5%	0.9%
Market Statistics								
Total Rooms Supply	1,521	1,521	1,521	1,619	1,894	2,003	2,077	2,077
Total Available Room Nights	555,165	555,165	555,165	590,935	691,310	731,095	758,105	758,105
% Change	----	0.0%	0.0%	6.4%	17.0%	5.8%	3.7%	0.0%
Market-wide Occupancy	**75.9%**	**76.6%**	**77.4%**	**76.7%**	**74.5%**	**73.9%**	**73.7%**	**74.4%**

Potential Demand

Using the methodology described earlier, the estimated potential demand for this segment is shown in the following chart.

Limited Service Hotels Estimate of Additional Capacity - Napa Valley											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	1521	1,521	1,521	1,619	1,894	2,003	2,077	2,077	2,077	2,077	2,077
Estimated Available Annual Room Nights	555,165	555,165	555,165	590,935	691,310	731,095	758,105	758,105	758,105	758,105	758,105
Total Projected Potential Demand	421,139	425,351	429,604	453,218	514,959	540,111	559,070	564,363	569,710	575,110	580,564
Estimated Sustainable Annual Occupancy		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Estimated Sustainable Annual Demand		416,374	416,374	443,201	518,483	548,321	568,579	568,579	568,579	568,579	568,579
Total Projected Potential Demand		425,351	429,604	453,218	514,959	540,111	559,070	564,363	569,710	575,110	580,564
less Est. Sustainable Annual Demand		416,374	416,374	443,201	518,483	548,321	568,579	568,579	568,579	568,579	568,579
Unsatisfied Annual Demand		8,977	13,230	10,017	(3,524)	(8,210)	(9,509)	(4,216)	1,131	6,531	11,985
Cumulative Potential Supply Expansion		**25**	**36**	**27**	**(10)**	**(22)**	**(26)**	**(12)**	**3**	**18**	**33**

Limited-service Hotels - Forecast of Average Rate

We have examined the rate structure and achieved average room rates and RevPARs of this product segment of the market, in forecasting marketwide average rate. The average rate data from the STR trend since 2010 shows a compound average annual growth rate of 3.5 percent which has slowed to 2.8 percent in the last three years. New hotels are expected to support a moderately higher average rate than the existing supply in this segment. Based on the foregoing, the projection of the subject's average daily rate is illustrated in the following table.

Limited Service Hotels - Napa Valley - Projected Base ADR Growth

Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$192.33
2018	4.0%	$200.03
2019	4.0%	$208.03
2020	4.0%	$216.35
2021	3.0%	$222.84
2022	3.0%	$229.53
2023	3.0%	$236.41
2024	3.0%	$243.50
2025	3.0%	$250.81
2026	3.0%	$258.33
2027	3.0%	$266.08

The operating performance of the subject hotel is projected in terms of annual guestroom occupancy and average daily room rate. Based on the previously concluded occupancy and average room rate, the subject’s room revenue is projected as illustrated below. The performance is forecast through a stabilized year, after which the stabilized occupancy is assumed for the remaining years and the average rate increases are inflationary.

Limited Service Hotels - Napa Valley - Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	-	-	98	373	482	556	556	556	556	556
Occupancy	77%	77%	77%	74%	74%	74%	75%	75%	75%	75%
Occupied Rooms	-	-	27,434	101,415	129,972	149,660	152,205	152,205	152,205	152,205
Existing Rooms Average Rate	$200.03	$208.03	$216.35	$222.84	$229.53	$236.41	$243.50	$250.81	$258.33	$266.08
Additional Rooms Rate Penetration	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
Additional Rooms Rate	$210.03	$218.43	$227.17	$233.98	$241.00	$248.23	$255.68	$263.35	$271.25	$279.39
RevPAR	$160.92	$169.03	$174.23	$174.29	$178.05	$183.06	$191.76	$197.51	$203.44	$209.54
Rooms Revenue	$0	$0	$6,232,090	$23,729,331	$31,323,559	$37,150,385	$38,915,712	$40,083,184	$41,285,679	$42,524,249

Limited Service Hotels - Napa Valley - Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	1,521	1,521	1,619	1,894	2,003	2,077	2,077	2,077	2,077	2,077
Occupancy	77%	77%	77%	74%	74%	74%	75%	75%	75%	75%
Occupied Rooms	425,351	429,604	453,218	514,959	540,111	559,070	568,579	568,579	568,579	568,579
Averate Room Rate	$200.03	$208.03	$217.01	$225.04	$232.29	$239.58	$246.76	$254.17	$261.79	$269.64
RevPAR	$153.26	$160.98	$166.43	$167.63	$171.61	$176.68	$185.07	$190.62	$196.34	$202.23
Rooms Revenue	$85,082,000	$89,370,000	$98,351,090	$115,884,331	$125,461,559	$133,940,385	$140,304,712	$144,513,184	$148,848,679	$153,314,249

City of Napa Limited-service Hotels – Forecasts of Rate and Occupancy

The methodology was used to forecast the performance of this segment for the properties located in the city of Napa. In developing this forecast, we have considered Transient Occupancy Tax data and the findings from our research. The new supply is anticipated to be able to garner higher rates than the existing supply elevating the rates for the market.

The charts showing forecasts for the city of Napa are set forth below.

Projection of Base Room Night Demand and Annual Growth - Limited Service Hotels - City of Napa

Segment	Historical	2018	2019	2020	2021	2022	2023	2024
Transient								
Annual Growth		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Base Demand	182,161	185,805	189,521	193,311	197,177	201,121	205,143	209,246
Displaced Demand	-----	0	0	13,057	50,690	66,813	78,612	80,184
Induced Demand	-----	0	0	5,233	19,917	25,737	29,688	29,688
Total Segment Demand	182,161	185,805	189,521	211,601	267,784	293,671	313,443	319,118
Meeting and Group								
Annual Growth		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Base Demand	20,240	20,443	20,647	20,853	21,062	21,273	21,486	21,701
Displaced Demand	-----	0	0	1,408	8,071	8,152	8,234	8,316
Induced Demand	-----	0	0	0	0	0	0	0
Total Segment Demand	20,240	20,443	20,647	22,261	29,133	29,425	29,720	30,017
Totals								
Transient	182,161	185,805	189,521	211,601	267,784	293,671	313,443	319,118
Meeting and Group	20,240	20,443	20,647	22,261	29,133	29,425	29,720	30,017
Total Market Demand	202,402	206,248	210,168	233,862	296,917	323,096	343,163	349,135
% Change	----	1.9%	1.9%	11.3%	27.0%	8.8%	6.2%	1.7%
Market Statistics								
Total Rooms Supply	731	731	731	829	1,104	1,213	1,287	1,287
Total Available Room Nights	266,815	266,815	266,815	302,585	402,960	442,745	469,755	469,755
% Change	----	0.0%	0.0%	13.4%	33.2%	9.9%	6.1%	0.0%
Market-wide Occupancy	**75.9%**	**77.3%**	**78.8%**	**77.3%**	**73.7%**	**73.0%**	**73.1%**	**74.3%**

Limited-Service Hotels City of Napa - Projected Base ADR Growth		
Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$192.33
2018	4.0%	$200.03
2019	4.0%	$208.03
2020	4.0%	$216.35
2021	3.0%	$222.84
2022	3.0%	$229.53
2023	3.0%	$236.41
2024	3.0%	$243.50
2025	3.0%	$250.81
2026	3.0%	$258.33
2027	3.0%	$266.08

In the following charts, we have applied a stabilized occupancy level of 75 percent. This occupancy could be higher as the new supply includes a number of branded properties; however in this market, overall occupancy levels in the mid- to high-70 percent range would likely encourage new projects from hotel developers.

Limited Service Estimate of Additional Capacity - City of Napa	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	731	731	731	829	1,104	1,213	1,287	1,287	1,287	1,287	1,287
Estimated Available Annual Room Nights	266,815	266,815	266,815	302,585	402,960	442,745	469,755	469,755	469,755	469,755	469,755
Total Projected Potential Demand	202,402	206,248	210,168	233,862	296,917	323,096	343,163	349,135	355,224	359,796	364,456
Estimated Sustainable Annual Occupancy		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Estimated Sustainable Annual Demand		200,111	200,111	226,939	302,220	332,059	352,316	352,316	352,316	352,316	352,316
Total Projected Potential Demand		206,248	210,168	233,862	296,917	323,096	343,163	349,135	355,224	359,796	364,456
less Est. Sustainable Annual Demand		200,111	200,111	226,939	302,220	332,059	352,316	352,316	352,316	352,316	352,316
Unsatisfied Annual Demand		6,137	10,057	6,924	(5,303)	(8,962)	(9,153)	(3,181)	2,908	7,480	12,140
Cumulative Potential Supply Expansion		**17**	**28**	**19**	**(15)**	**(25)**	**(25)**	**(9)**	**8**	**20**	**33**

Limited Service Hotels - City of Napa - Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	-	-	98	373	482	556	556	556	556	556
Occupancy	77%	79%	77%	74%	73%	73%	75%	75%	75%	75%
Occupied Rooms	-	-	27,646	100,317	128,386	148,251	152,205	152,205	152,205	152,205
Existing Rooms Average Rate	$200.03	$208.03	$216.35	$222.84	$229.53	$236.41	$243.50	$250.81	$258.33	$266.08
Additional Rooms Rate Penetration	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Additional Rooms Rate	$220.03	$228.83	$237.99	$245.13	$252.48	$260.05	$267.85	$275.89	$284.17	$292.69
RevPAR	$170.08	$180.25	$183.93	$180.62	$184.25	$189.97	$200.89	$206.92	$213.13	$219.52
Rooms Revenue	$0	$0	$6,579,343	$24,590,266	$32,414,796	$38,553,066	$40,768,841	$41,991,907	$43,251,664	$44,549,214

Limited Service Hotels - City of Napa - Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	731	731	829	1,104	1,213	1,287	1,287	1,287	1,287	1,287
Occupancy	77%	79%	77%	74%	73%	73%	75%	75%	75%	75%
Occupied Rooms	206,248	210,168	233,862	296,917	323,096	343,163	352,316	352,316	352,316	352,316
Averate Room Rate	$200.03	$208.03	$218.91	$230.37	$238.65	$246.53	$254.02	$261.65	$269.49	$277.58
RevPAR	$154.62	$163.86	$169.19	$169.75	$174.15	$180.09	$190.52	$196.23	$202.12	$208.18
Rooms Revenue	$41,255,000	$43,721,000	$51,194,343	$68,401,266	$77,105,796	$84,600,066	$89,496,841	$92,181,907	$94,946,664	$97,795,214

Full-Service Hotels

Full-service Occupancy Forecast

The full-service lodging segment has seen large increases over the past 13 years. With the strong post-recessionary economy, the new supply was steadily absorbed, supporting strong average rate growth. The full-service hotels were impacted in 2016 with renovations to some of the properties and in 2017 from the fires. The segment is expected to continue to show a strong performance in 2018 with the absorption of The Archer hotel and the continued expansion of retail and food and beverage offerings in downtown Napa. With the larger room counts per property, the segment has generated occupancy level in the low 70 percent range. We have used a stabilized occupancy level of 72 percent in the analysis. The following chart shows the STR trend data.

Market Supply, Demand, Occupancy, ADR and RevPAR - Full Service Hotels

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2003	1,013	369,641	-----	257,100	-----	69.6%	-----	$163.11	-----	$113.45	-----
2004	1,236	451,140	18.1%	287,945	10.7%	63.8%	-9.0%	$161.33	-1.1%	$102.97	-9.2%
2005	1,236	451,140	0.0%	306,615	6.1%	68.0%	6.1%	$162.61	0.8%	$110.52	7.3%
2006	1,336	487,712	7.5%	323,253	5.1%	66.3%	-2.5%	$168.82	3.7%	$111.89	1.2%
2007	1,523	555,895	12.3%	368,419	12.3%	66.3%	0.0%	$173.07	2.5%	$114.70	2.5%
2008	1,583	577,855	3.8%	362,824	-1.5%	62.8%	-5.6%	$178.36	3.0%	$111.99	-2.4%
2009	1,774	647,539	10.8%	357,128	-1.6%	55.2%	-13.8%	$159.78	-11.6%	$88.12	-21.3%
2010	1,844	673,060	3.8%	407,363	12.3%	60.5%	8.9%	$163.96	2.6%	$99.24	12.6%
2011	1,844	673,060	0.0%	437,392	6.9%	65.0%	6.9%	$179.36	8.6%	$116.56	17.5%
2012	1,955	713,485	5.7%	474,594	7.8%	66.5%	2.3%	$192.78	7.0%	$128.23	10.0%
2013	1,987	725,258	1.6%	497,301	4.6%	68.6%	3.0%	$210.11	8.2%	$144.07	12.4%
2014	1,950	711,699	-1.9%	487,955	-1.9%	68.6%	0.0%	$221.70	5.2%	$152.00	5.5%
2015	1,976	721,240	1.3%	522,744	6.7%	72.5%	5.4%	$240.75	7.9%	$174.49	14.8%
2016	1,976	721,240	0.0%	517,422	-1.0%	71.7%	-1.0%	$254.91	5.6%	$182.87	4.8%
2017	2,009	733,139	1.6%	518,362	0.2%	70.7%	-1.5%	$254.42	-0.2%	$179.88	-1.6%
Avg Annual Percent Change			0.5%		1.4%		0.9%		2.6%		#NUM!
Average 2010 to 2017	1,943	709,023		482,892		68.1%			5.7%		
Average 2015 to 2017	1,987	725,206		519,509		71.6%			2.8%		

Source: **STR**

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

From 2010 to 2017 occupancy levels increased steadily. The full-service hotel occupancy has been relatively stable in recent years as seasonal patterns of demand constrain some growth. Rate growth has been very strong since 2010, moderating in 2017. Full-service hotels have the greatest complement of meeting space and many are branded. Demand in this segment is anticipated to grow with the proposed hotels shown in the following chart.

Proposed Hotel Supply Napa Valley - Full Service Hotels

Name	City	Type	Number of Rooms	Meeting Space (SF)	Status	Estimated Opening Date
Meritage Expansion	Napa	Full Serivce	145	10,000	Projects Under Construction	August 1, 2018
Archer Hotel	Napa	Full Service	137		Remaining Rooms	January 1, 2018
Westin Expansion	Napa	Full Service	32		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2020
Embassy Suites Addition	Napa	Full Service	54	4,045	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Franklin Station Post Office	Napa	Full Service	180	N/A	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
NV Wine Train Hotel	Napa	Full Service	148		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2021
Plenary Hotel Project	Napa	Full Service	275	10,000	In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	January 1, 2022
Widewaters Hotel	Napa	Full Service	140		In Completeness Review Phase, Pre-Application Phase, or Conceptual Design State	Speculative
Adams Street RFP	St. Helena	Full Service	N/A		Proposed - Speculative	Speculative
Downtown Main Street RFP	St. Helena	Full Service	N/A		Proposed - Speculative	Speculative
Watson Ranch Hotel	American Canyon	Full Service	200		Seeking Entitlements - Speculative	Speculative

Source: Cushman & Wakefield

The forecast of occupancy was developed considering the new supply and the estimates of base and latent demand for this product type and location as shown in the following chart.

Projection of Base Room Night Demand and Annual Growth - Full Service Hotels

Segment	Historical	2018	2019	2020	2021	2022	2023	2024
Transient								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	393,662	405,472	417,636	430,165	443,070	456,362	470,053	484,155
Displaced Demand	-----	14,989	24,139	27,674	62,982	90,503	93,314	96,113
Induced Demand	-----	7,662	11,979	13,334	29,461	41,102	41,144	41,144
Total Segment Demand	393,662	428,123	453,754	471,173	535,513	587,967	604,511	621,412
Meeting and Group								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	98,415	101,368	104,409	107,541	110,767	114,090	117,513	121,038
Displaced Demand	-----	3,747	6,035	6,919	21,989	22,649	23,328	24,028
Induced Demand	-----	2,694	4,213	4,689	10,361	14,454	14,469	14,469
Total Segment Demand	98,415	107,809	114,657	119,149	143,117	151,193	155,310	159,535
Totals								
Transient	393,662	428,123	453,754	471,173	535,513	587,967	604,511	621,412
Meeting and Group	98,415	107,809	114,657	119,149	143,117	151,193	155,310	159,535
Total Market Demand	492,077	535,932	568,411	590,322	678,630	739,160	759,821	780,947
% Change	----	8.9%	6.1%	3.9%	15.0%	8.9%	2.8%	2.8%
Market Statistics								
Total Rooms Supply	1,907	2,088	2,190	2,222	2,603	2,878	2,879	2,879
Total Available Room Nights	695,964	762,029	799,259	810,939	950,004	1,050,379	1,050,744	1,050,744
% Change	----	9.5%	4.9%	1.5%	17.1%	10.6%	0.0%	0.0%
Market-wide Occupancy	**70.7%**	**70.3%**	**71.1%**	**72.8%**	**71.4%**	**70.4%**	**72.3%**	**74.3%**

Potential Demand

Using the methodology described earlier, the estimated potential demand for this segment is shown in the following chart.

Full Service Hotels Estimate of Additional Capacity											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	1907	2,088	2,190	2,222	2,603	2,878	2,879	2,879	2,879	2,879	2,879
Estimated Available Annual Room Nights	695,964	762,029	799,259	810,939	950,004	1,050,379	1,050,744	1,050,744	1,050,744	1,050,744	1,050,744
Total Projected Potential Demand	492,077	535,932	568,411	590,322	678,630	739,160	759,821	780,947	802,707	825,119	848,204
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		545,887	572,558	580,925	680,545	752,450	752,712	752,712	752,712	752,712	752,712
Total Projected Potential Demand		535,932	568,411	590,322	678,630	739,160	759,821	780,947	802,707	825,119	848,204
less Est. Sustainable Annual Demand		545,887	572,558	580,925	680,545	752,450	752,712	752,712	752,712	752,712	752,712
Unsatisfied Annual Demand		(9,955)	(4,147)	9,397	(1,916)	(13,290)	7,109	28,235	49,995	72,407	95,492
Cumulative Potential Supply Expansion		**(27)**	**(11)**	**26**	**(5)**	**(36)**	**19**	**77**	**137**	**198**	**262**

Full-service Hotels - Forecast of Average Rate

We have examined the rate structure and achieved average room rates and RevPARs of this product segment of the market, in forecasting marketwide average rate. The average rate data from the STR trend since 2010 shows a compound average annual growth rate of 5.7 percent which has slowed to 2.8 percent in the last three years. New hotels are expected to support a moderately higher average rate than the existing supply in this segment. Based on the foregoing, the projection of the subject's average daily rate is illustrated in the following table.

Full Service Hotels - Napa County - Projected ADR - Fiscal Year

Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$254.42
2018	3.0%	$262.05
2019	4.0%	$272.53
2020	5.0%	$286.16
2021	3.0%	$294.74
2022	3.0%	$303.58
2023	3.0%	$312.69
2024	3.0%	$322.07
2025	3.0%	$331.73
2026	3.0%	$341.69
2027	3.0%	$351.94

The operating performance of the subject hotel is projected in terms of annual guestroom occupancy and average daily room rate. Based on the previously concluded occupancy and average room rate, the subject’s room revenue is projected as illustrated below. The performance is forecast through a stabilized year, after which the stabilized occupancy is assumed for the remaining years and the average rate increases are inflationary.

Full Service Hotels - Napa Valley - Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	181	283	315	696	971	972	972	972	972	972
Occupancy	70%	71%	73%	71%	70%	72%	72%	72%	72%	72%
Occupied Rooms	46,463	73,461	83,696	181,472	249,405	256,551	254,150	254,150	254,150	254,150
Existing Rooms Average Rate	$262.05	$272.53	$286.16	$294.74	$303.58	$312.69	$322.07	$331.73	$341.69	$351.94
Additional Rooms Rate Penetration	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Additional Rooms Rate	$288.25	$299.78	$314.77	$324.22	$333.94	$343.96	$354.28	$364.91	$375.86	$387.13
RevPAR	$202.73	$213.20	$229.14	$231.60	$235.00	$248.73	$253.79	$261.41	$269.25	$277.33
Rooms Revenue	$13,393,215	$22,022,284	$26,345,226	$58,836,171	$83,286,877	$88,243,537	$90,040,401	$92,741,613	$95,523,861	$98,389,577

Full Service Hotels - Napa Valley -Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	2,088	2,190	2,222	2,603	2,878	2,879	2,879	2,879	2,879	2,879
Occupancy	70%	71%	73%	71%	70%	72%	72%	72%	72%	72%
Occupied Rooms	535,932	568,411	590,322	678,630	739,160	759,821	752,712	752,712	752,712	752,712
Averate Room Rate	$264.32	$276.05	$290.21	$302.62	$313.83	$323.25	$332.95	$342.94	$353.22	$363.82
RevPAR	$185.90	$196.32	$211.26	$216.18	$220.84	$233.75	$238.51	$245.67	$253.04	$260.63
Rooms Revenue	$141,658,215	$156,911,284	$171,320,226	$205,369,171	$231,968,877	$245,611,537	$250,613,401	$258,131,613	$265,875,861	$273,851,577

City of Napa Full-service Hotels – Forecasts of Rate and Occupancy

The methodology was used to forecast the performance of this segment for the properties located in the city of Napa. In developing this forecast, we have considered TOT data for the city and the findings from our research. The new supply is anticipated to be able to garner higher rates than the existing supply elevating the rates for the market. We have used 72 percent as the stabilized occupancy, consistent with the occupancy used for the county analysis as most of the supply is located in the City of Napa.

The charts showing forecasts for the City of Napa are set forth below.

Projection of Base Room Night Demand and Annual Growth - Full Service Hotels - City of Napa

Segment	Historical	2018	2019	2020	2021	2022	2023	2024
Transient								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	296,214	305,101	314,254	323,682	333,392	343,394	353,696	364,307
Displaced Demand	-----	14,989	24,139	27,674	62,982	90,503	93,314	96,113
Induced Demand	-----	7,662	11,979	13,334	29,461	41,102	41,144	41,144
Total Segment Demand	296,214	327,752	350,372	364,690	425,835	474,999	488,154	501,564
Meeting and Group								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	74,054	76,275	78,563	80,920	83,348	85,848	88,423	91,076
Displaced Demand	-----	3,747	6,035	6,919	21,989	22,649	23,328	24,028
Induced Demand	-----	2,694	4,213	4,689	10,361	14,454	14,469	14,469
Total Segment Demand	74,054	82,716	88,811	92,528	115,698	122,951	126,220	129,573
Totals								
Transient	296,214	327,752	350,372	364,690	425,835	474,999	488,154	501,564
Meeting and Group	74,054	82,716	88,811	92,528	115,698	122,951	126,220	129,573
Total Market Demand	370,268	410,468	439,183	457,218	541,533	597,950	614,374	631,137
% Change	----	10.9%	7.0%	4.1%	18.4%	10.4%	2.7%	2.7%
Market Statistics								
Total Rooms Supply	1,435	1,616	1,718	1,750	2,131	2,406	2,407	2,407
Total Available Room Nights	523,684	589,749	626,979	638,659	777,724	878,099	878,464	878,464
% Change	----	12.6%	6.3%	1.9%	21.8%	12.9%	0.0%	0.0%
Market-wide Occupancy	**70.7%**	**69.6%**	**70.0%**	**71.6%**	**69.6%**	**68.1%**	**69.9%**	**71.8%**

Full Service Hotels - City of Napa - Projected ADR - Fiscal Year		
Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$254.42
2018	3.0%	$262.05
2019	4.0%	$272.53
2020	5.0%	$286.16
2021	3.0%	$294.74
2022	3.0%	$303.58
2023	3.0%	$312.69
2024	3.0%	$322.07
2025	3.0%	$331.73
2026	3.0%	$341.69
2027	3.0%	$351.94

Full Service Estimate of Additional Capacity - City of Napa											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	1435	1,616	1,718	1,750	2,131	2,406	2,407	2,407	2,407	2,407	2,407
Estimated Available Annual Room Nights	523,684	589,749	626,979	638,659	777,724	878,099	878,464	878,464	878,464	878,464	878,464
Total Projected Potential Demand	370,268	410,468	439,183	457,218	541,533	597,950	614,374	631,137	648,402	666,185	684,503
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		424,619	451,425	459,834	559,961	632,231	632,494	632,494	632,494	632,494	632,494
Total Projected Potential Demand		410,468	439,183	457,218	541,533	597,950	614,374	631,137	648,402	666,185	684,503
less Est. Sustainable Annual Demand		424,619	451,425	459,834	559,961	632,231	632,494	632,494	632,494	632,494	632,494
Unsatisfied Annual Demand		(14,151)	(12,242)	(2,616)	(18,429)	(34,281)	(18,120)	(1,357)	15,908	33,691	52,009
Cumulative Potential Supply Expansion		**(39)**	**(34)**	**(7)**	**(50)**	**(94)**	**(50)**	**(4)**	**44**	**92**	**142**

Full Service - City of Napa - Room Revenue Contribution from New Supply										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	181	283	315	696	971	972	972	972	972	972
Occupancy	70%	70%	72%	70%	68%	70%	72%	72%	72%	72%
Occupied Rooms	45,982	72,356	82,311	176,889	241,342	248,124	255,442	255,442	255,442	255,442
Existing Rooms Average Rate	$262.05	$272.53	$286.16	$294.74	$303.58	$312.69	$322.07	$331.73	$341.69	$351.94
Additional Rooms Rate Penetration	110%	110%	110%	110%	110%	110%	110%	110%	110%	110%
Additional Rooms Rate	$288.25	$299.78	$314.77	$324.22	$333.94	$343.96	$354.28	$364.91	$375.86	$387.13
RevPAR	$200.63	$209.99	$225.35	$225.75	$227.40	$240.56	$255.08	$262.73	$270.62	$278.73
Rooms Revenue	$13,254,362	$21,691,016	$25,909,287	$57,350,362	$80,594,523	$85,344,868	$90,497,827	$93,212,762	$96,009,144	$98,889,419

Full Service - City of Napa -Forecast of Room Revenue										
Projection Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	1,616	1,718	1,750	2,131	2,406	2,407	2,407	2,407	2,407	2,407
Occupancy	70%	70%	72%	70%	68%	70%	72%	72%	72%	72%
Occupied Rooms	410,468	439,183	457,218	541,533	597,950	614,374	632,494	632,494	632,494	632,494
Averate Room Rate	$264.98	$277.02	$291.31	$304.37	$315.84	$325.32	$335.08	$345.13	$355.49	$366.15
RevPAR	$184.43	$194.05	$208.55	$211.93	$215.07	$227.52	$241.26	$248.49	$255.95	$263.63
Rooms Revenue	$108,767,362	$121,663,016	$133,191,287	$164,826,362	$188,854,523	$199,868,868	$211,935,827	$218,293,762	$224,843,144	$231,588,419

Luxury Hotels & Resort Occupancy Forecast

The luxury hotels & resort segment has seen notable additions to supply in the last 11 years. With the exception of the recessionary years, demand for this segment has been strong, supporting steady average rate growth. This segment represents a wide variety of lodging properties with rates that can exceed $2,000 on peak nights. New supply is planned for the segment throughout the valley. Below is the data from the STR trend.

Market Supply, Demand, Occupancy, ADR and RevPAR - Luxury Hotels and Resorts Napa Valley

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2008	752	274,360	-----	180,183	-----	65.7%	-----	$356.32	-----	$234.01	-----
2009	809	295,188	7.1%	166,626	-8.1%	56.4%	-16.3%	$377.30	5.6%	$212.97	-9.0%
2010	830	302,950	2.6%	183,603	9.2%	60.6%	6.9%	$440.59	14.4%	$267.02	25.4%
2011	857	312,636	3.1%	205,094	10.5%	65.6%	7.6%	$461.97	4.6%	$303.06	13.5%
2012	859	313,535	0.3%	215,461	4.8%	68.7%	4.5%	$490.30	5.8%	$336.93	11.2%
2013	857	312,731	-0.3%	225,536	4.5%	72.1%	4.7%	$523.52	6.3%	$377.55	12.1%
2014	866	316,253	1.1%	219,601	-2.7%	69.4%	-3.9%	$561.39	6.7%	$389.82	3.3%
2015	955	348,703	9.3%	242,710	9.5%	69.6%	0.2%	$575.66	2.5%	$400.68	2.8%
2016	955	348,636	0.0%	257,507	5.7%	73.9%	5.8%	$598.30	3.8%	$441.91	10.3%
2017	1,013	369,748	5.7%	249,681	-3.1%	67.5%	-9.4%	$603.82	0.9%	$407.74	-7.7%
Avg Annual Percent Change			1.2%		1.8%		0.6%		1.9%		3.3%
Average 2010 to 2017	899	328,149		224,899		68.5%			4.6%		
Average 2015 to 2017	975	355,696		249,966		70.3%			2.4%		

Source: **STR**

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

From 2010 to 2017 occupancy levels for this segment increased steadily. The Luxury Hotel & Resort occupancy has fluctuated in recent years with economic influences and the absorption of new supply. Rate growth has been strong since 2010, moderating in 2017. The annual occupancy levels of this segment are lower than the Full-service hotels due to higher rates and seasonal trends. Demand in this segment is anticipated to grow substantially with the increases in supply. The proposed Luxury lodging is mostly branded and is expected to bring new demand to the market. The proposed hotels are shown in the following chart.

Proposed Hotel Supply Napa Valley

Name	City	Type	Number of Rooms	Meeting Space (SF)	Status	Estimated Opening Date
Los Alcobas	St. Helena	Luxury	11		Remaining Rooms	January 1, 2018
Villagio Expansion	Yountville	Luxury	1	4,000	Projects Under Construction	June 1, 2018
Bardessono Expansion	Yountville	Luxury	3		Projects Under Construction	June 1, 2018
Farmstead at Long Meadow Ranch	St. Helena	Luxury	50		Proposed - Speculative	Speculative
Four Seasons Calistoga	Calistoga	Luxury	83	7,540	Projects Under Construction	June 1, 2019
Rosewood Calistoga Hills	Calistoga	Luxury	110	4,464	Projects Under Construction	January 1, 2020
Ritz-Carlton Napa Valley	Napa	Luxury	351	21,100	Projects Approved/Construction Pending	January 1, 2022
Stanly Ranch	Napa	Luxury	132	15,500	Projects Approved/Construction Pending	January 1, 2022
Montalcino Resort	Unincorporated	Luxury	379	34,000	Projects Approved/Construction Pending	Speculative
Hotel Condo Project	Napa	Luxury	84 to 124		Proposed - Speculative	Speculative
The Veranda	Calistoga	Luxury	170		Seeking Entitlements	Speculative
French Laundry Inn	Yountville	Luxury	12		Proposed - Speculative	Speculative

Source: Cushman & Wakefield

A number of the properties in this chart have been proposed for many years and some are still considered speculative. We have considered projects in Napa and in Calistoga in the models. As the city of Napa inventory did not include any luxury properties in the existing supply, this market is only considered with the county geography.

The forecast of occupancy was developed considering the new supply and the estimates of base and latent demand for this product type and location as shown in the following chart.

Projection of Base Room Night Demand and Annual Growth - Luxury Hotels and Resorts Napa Valley								
Segment	**Historical**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Transient								
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Base Demand	203,568	209,675	215,965	222,444	229,117	235,991	243,071	250,363
Displaced Demand	-----	1,391	6,284	23,731	24,443	83,240	85,861	88,437
Induced Demand	-----	577	2,528	9,269	9,269	30,646	30,690	30,690
Total Segment Demand	203,568	211,643	224,777	255,444	262,829	349,877	359,622	369,490
Meeting and Group								
Annual Growth		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Base Demand	35,924	36,642	37,375	38,123	38,885	39,663	40,456	41,265
Displaced Demand	-----	243	1,088	4,067	13,736	14,011	14,291	14,577
Induced Demand	-----	153	669	2,454	2,454	8,112	8,124	8,124
Total Segment Demand	35,924	37,038	39,132	44,644	55,075	61,786	62,871	63,966
Totals								
Transient	203,568	211,643	224,777	255,444	262,829	349,877	359,622	369,490
Meeting and Group	35,924	37,038	39,132	44,644	55,075	61,786	62,871	63,966
Total Market Demand	239,491	248,682	263,908	300,089	317,904	411,663	422,493	433,456
% Change	----	3.8%	6.1%	13.7%	5.9%	29.5%	2.6%	2.6%
Market Statistics								
Total Rooms Supply	972	985	1,029	1,181	1,181	1,663	1,664	1,664
Total Available Room Nights	354,658	359,403	375,463	430,943	430,943	606,873	607,238	607,238
% Change	----	1.3%	4.5%	14.8%	0.0%	40.8%	0.1%	0.0%
Market-wide Occupancy	**67.5%**	**69.2%**	**70.3%**	**69.6%**	**73.8%**	**67.8%**	**69.6%**	**71.4%**

Potential Demand

Using the methodology described earlier, the estimated potential demand for this segment is shown in the following chart.

Luxury Hotels and Resorts - Estimate of Additional Capacity											
	Historical	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Estimated Available Rooms	972	985	1,029	1,181	1,181	1,663	1,664	1,664	1,664	1,664	1,664
Estimated Available Annual Room Nights	354,658	359,403	375,463	430,943	430,943	606,873	607,238	607,238	607,238	607,238	607,238
Total Projected Potential Demand	239,491	248,682	263,908	300,089	317,904	411,663	422,493	433,456	444,737	456,345	468,290
Estimated Sustainable Annual Occupancy		70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Estimated Sustainable Annual Demand		251,582	262,824	301,660	301,660	424,811	425,067	425,067	425,067	425,067	425,067
Total Projected Potential Demand		248,682	263,908	300,089	317,904	411,663	422,493	433,456	444,737	456,345	468,290
less Est. Sustainable Annual Demand		251,582	262,824	301,660	301,660	424,811	425,067	425,067	425,067	425,067	425,067
Unsatisfied Annual Demand		(2,901)	1,084	(1,572)	16,244	(13,149)	(2,574)	8,389	19,670	31,278	43,223
Cumulative Potential Supply Expansion		**(8)**	**3**	**(4)**	**45**	**(36)**	**(7)**	**23**	**54**	**86**	**118**

Luxury Hotels and Resorts- Forecast of Average Rate

We have examined the rate structure and achieved average room rates and RevPARs of this product segment of the market, in forecasting marketwide average rate. The average rate data from the STR trend since 2010 shows a compound average annual growth rate of 4.6 percent which has slowed to 2.4 percent in the last three years. New hotels are expected to support a moderately higher average rate than the existing supply in this segment. Based on the foregoing, the projection of the subject's average daily rate is illustrated in the following table.

Luxury Hotels & Resorts - Projected Base ADR - Fiscal Year

Year	Projected ADR Growth	Projected ADR
Positioned ADR	---	$603.82
2018	4.0%	$627.97
2019	4.0%	$653.09
2020	3.0%	$672.68
2021	3.0%	$692.86
2022	3.0%	$713.65
2023	3.0%	$735.06
2024	3.0%	$757.11
2025	3.0%	$779.82
2026	3.0%	$803.21
2027	3.0%	$827.31

The operating performance of the subject hotel is projected in terms of annual guestroom occupancy and average daily room rate. Based on the previously concluded occupancy and average room rate, the subject’s room revenue is projected as illustrated below. The performance is forecast through a stabilized year, after which the stabilized occupancy is assumed for the remaining years and the average rate increases are inflationary.

Luxury Hotels and Resorts - Napa Valley - Room Revenue Contribution from New Supply										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	13	57	209	209	691	692	692	692	692	692
Occupancy	69%	70%	70%	74%	68%	70%	70%	70%	70%	70%
Occupied Rooms	3,283	14,624	53,121	56,275	171,086	176,806	176,806	176,806	176,806	176,806
Existing Rooms Average Rate	$627.97	$653.09	$672.68	$692.86	$713.65	$735.06	$757.11	$779.82	$803.21	$827.31
Additional Rooms Rate Penetration	150%	150%	150%	135%	135%	135%	135%	135%	135%	135%
Additional Rooms Rate	$941.95	$979.63	$1,009.02	$935.36	$963.42	$992.32	$1,022.09	$1,052.76	$1,084.34	$1,116.87
RevPAR	$651.76	$688.57	$702.63	$690.01	$653.52	$694.63	$715.47	$736.93	$759.04	$781.81
Rooms Revenue	$3,092,622	$14,325,689	$53,600,453	$52,637,449	$164,827,940	$175,448,981	$180,712,450	$186,133,824	$191,717,839	$197,469,374

Luxury Hotels and Resorts - Napa Valley -Forecast of Room Revenue										
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Number of Days	365	365	365	365	365	365	365	365	365	365
Number of Rooms	985	1,029	1,181	1,181	1,663	1,664	1,664	1,664	1,664	1,664
Occupancy	69%	70%	70%	74%	68%	70%	70%	70%	70%	70%
Occupied Rooms	248,682	263,908	300,089	317,904	411,663	425,067	425,067	425,067	425,067	425,067
Averate Room Rate	$632.11	$671.18	$732.22	$735.79	$817.45	$854.33	$879.96	$906.36	$933.55	$961.56
RevPAR	$437.38	$471.77	$509.88	$542.79	$554.51	$598.03	$615.97	$634.45	$653.49	$673.09
Rooms Revenue	$157,194,622	$177,130,689	$219,730,453	$233,910,449	$336,514,940	$363,147,981	$374,042,450	$385,263,824	$396,821,839	$408,726,374

Combined County Analysis

The data and projections for the four product types were combined to represent the county-wide historical and estimated hotel industry performance. Using the same methodology discussed early, the following charts set forth the findings.

Market Supply, Demand, Occupancy, ADR and RevPAR - Napa Valley

Year	Rooms	Supply	% Change	Demand	% Change	Occ	% Change	ADR	% Change	RevPAR	% Change
2010	3,698	1,349,770	-----	818,972	-----	60.7%	-----	$226.48	-----	$137.42	-----
2011	3,724	1,359,334	0.7%	881,194	7.6%	64.8%	6.8%	$241.84	6.8%	$156.77	14.1%
2012	3,838	1,400,721	3.0%	937,641	6.4%	66.9%	3.3%	$255.04	5.5%	$170.73	8.9%
2013	3,867	1,411,384	0.8%	986,038	5.2%	69.9%	4.4%	$274.71	7.7%	$191.92	12.4%
2014	3,841	1,401,926	-0.7%	983,556	-0.3%	70.2%	0.4%	$289.31	5.3%	$202.97	5.8%
2015	3,956	1,444,068	3.0%	1,048,894	6.6%	72.6%	3.5%	$307.63	6.3%	$223.45	10.1%
2016	4,053	1,479,191	2.4%	1,075,211	2.5%	72.7%	0.1%	$324.61	5.5%	$235.95	5.6%
2017	4,162	1,518,987	2.7%	1,079,637	0.4%	71.1%	-2.2%	$322.88	-0.5%	$229.49	-2.7%
Avg Annual Percent Change			1.7%		4.0%		2.3%		5.2%		7.6%
Average 2010 to 2017	3,892	1,420,673		976,393		68.7%					
Average 2015 to 2017	4,057	1,480,749		1,067,914		72.1%					

Source: STR

REPUBLICATION OR OTHER RE-USE OF THIS DATA WITHOUT THE EXPRESS WRITTEN PERMISSION OF STR IS STRICTLY PROHIBITED

Projection of Base Room Night Demand and Annual Growth - County of Napa

Segment	Historical	2018	2019	2020	2021	2022	2023	2024
Transient								
Annual Growth		1.8%	1.7%	5.8%	12.2%	9.1%	8.6%	2.5%
Base Demand	1,192,996	1,192,264	1,197,344	1,228,763	1,261,111	1,294,416	1,328,710	1,364,023
Displaced Demand	-----	14,741	25,561	54,849	145,886	218,436	295,811	304,642
Induced Demand	-----	7,492	11,920	22,396	58,042	85,958	111,537	111,582
Total Segment Demand	1,192,996	1,214,497	1,234,825	1,306,008	1,465,039	1,598,810	1,736,058	1,780,247
Meeting and Group								
Annual Growth		4.8%	3.7%	4.4%	18.8%	8.7%	3.8%	1.6%
Base Demand	184,094	186,630	189,969	193,371	196,837	200,369	203,967	207,633
Displaced Demand	-----	3,649	5,855	9,723	38,426	48,701	49,594	50,503
Induced Demand	-----	2,671	4,172	5,684	12,706	20,585	26,314	26,325
Total Segment Demand	184,094	192,950	199,996	208,778	247,969	269,655	279,875	284,461
Totals								
Transient	1,192,996	1,214,497	1,234,825	1,306,008	1,465,039	1,598,810	1,736,058	1,780,247
Meeting and Group	184,094	192,950	199,996	208,778	247,969	269,655	279,875	284,461
Total Market Demand	1,377,091	1,407,446	1,434,822	1,514,786	1,713,008	1,868,465	2,015,933	2,064,708
% Change	----	2.2%	1.9%	5.6%	13.1%	9.1%	7.9%	2.4%
Market Statistics								
Total Rooms Supply	5,115	5,321	5,515	5,792	6,483	7,599	7,675	7,675
Total Available Room Nights	1,866,975	1,941,983	2,012,975	2,114,080	2,366,295	2,773,635	2,801,375	2,801,375
% Change	----	4.0%	3.7%	5.0%	11.9%	17.2%	1.0%	0.0%
Market-wide Occupancy	**71.7%**	**71.8%**	**72.4%**	**72.6%**	**72.3%**	**70.5%**	**71.7%**	**73.2%**

Napa Valley Estimate of Additional Capacity											
	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	5074.417	5,277	5,444	5,762	6,453	7,319	7,395	7,395	7,395	7,395	7,395
Estimated Available Annual Room Nights	1,852,162	1,926,257	1,987,212	2,103,282	2,355,497	2,671,587	2,699,327	2,699,327	2,699,327	2,699,327	2,699,327
Total Projected Potential Demand	1,327,822	1,382,957	1,439,520	1,527,776	1,702,043	1,883,390	1,935,765	1,975,091	2,015,442	2,056,845	2,099,332
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		1,386,905	1,430,793	1,514,363	1,695,958	1,923,543	1,943,516	1,943,516	1,943,516	1,943,516	1,943,516
Total Projected Potential Demand		1,382,957	1,439,520	1,527,776	1,702,043	1,883,390	1,935,765	1,975,091	2,015,442	2,056,845	2,099,332
less Est. Sustainable Annual Demand		1,386,905	1,430,793	1,514,363	1,695,958	1,923,543	1,943,516	1,943,516	1,943,516	1,943,516	1,943,516
Unsatisfied Annual Demand		(3,948)	8,727	13,413	6,086	(40,153)	(7,751)	31,576	71,927	113,330	155,817
Cumulative Potential Supply Expansion		**(11)**	**24**	**37**	**17**	**(110)**	**(21)**	**87**	**197**	**310**	**427**

Projected Rooms Revenue - Napa Valley Lodging - Napa Valley CA						
Projection Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Number of Days	365	365	365	365	365	365
Number of Rooms	5,505	5,630	5,792	6,483	7,599	7,675
Occupancy	69%	70%	72%	72%	68%	69%
Occupied Rooms	1,382,957	1,439,520	1,527,776	1,702,043	1,883,390	1,937,057
Average Rate	$321.59	$339.24	$366.16	$370.02	$409.67	$424.83
RevPAR	$221.36	$237.64	$264.61	$266.15	$278.18	$293.76
Rooms Revenue	$444,746,080	$488,338,861	$559,416,537	$629,786,279	$771,574,812	$822,926,063

Revenue and Expense Analysis

Based on the market for transient accommodations in the subject's area, we have forecast future rooms revenue for the four property types, which was detailed in a previous section of this report. Composite of actual operating statements from comparable properties in the area were used to estimate base levels of revenues and expenses.

The following charts show the composite statements followed by the representative revenue and expense statements for each property type.

Representative Revenue and Expense Performance by Lodging Category

Representative Year - Revenues and Expenses - Napa Valley Hotels												
	B&B/Small Inns			*Limited Service*			*Full Service*			*Luxury*		
	Ratio to Sales	PAR	POR	Ratio to Sales	PAR	POR	Ratio to Sales	PAR	POR	Ratio to Sales	PAR	POR
Occupancy	69%			76%			71%			68%		
Average Size (Rooms)		675			1,521			1,907			972	
Average Rate			$338			$192			$254			$604
REVENUE												
Rooms	98.0%	$85,235	$338.00	98.3%	$53,254	$192.33	75.9%	$65,658	$254.42	66.9%	$148,825	$603.82
Food & Beverage	0.0%	$0	$0.00	0.0%	$0	$0.00	16.7%	$14,445	$55.97	26.8%	$59,530	$241.53
Minor Operated Departments	2.0%	$1,705	$6.76	1.7%	$929	$3.35	4.0%	$3,447	$13.36	5.4%	$11,906	$48.31
Other Income	0.0%	$0	$0.00	0.0%	$0	$0.00	3.4%	$2,955	$11.45	1.0%	$2,232	$9.06
TOTAL REVENUE	100.0%	$86,939	$344.76	100.0%	$54,183	$195.69	100.0%	$86,504	$335.19	100.1%	$222,494	$902.70
DEPARTMENTAL EXPENSES												
Rooms	26.0%	$22,161	$87.88	20.0%	$10,651	$38.47	22.0%	$14,445	$55.97	24.0%	$35,718	$144.92
Food & Beverage	0.0%	$0	$0.00	0.0%	$0	$0.00	65.0%	$9,389	$36.38	90.0%	$53,577	$217.37
Minor Operated Departments	50.0%	$852	$3.38	25.0%	$232	$0.84	95.0%	$3,275	$12.69	75.0%	$8,930	$36.23
TOTAL DEPARTMENTAL EXPENSES	26.5%	$23,013	$91.26	20.1%	$10,883	$39.31	31.3%	$27,108	$105.04	44.1%	$98,225	$398.52
DEPARTMENTAL INCOME	73.5%	$63,926	$253.50	79.9%	$43,300	$156.38	68.7%	$59,395	$230.15	55.9%	$124,269	$504.19
UNDISTRIBUTED OPERATING EXPENSES												
Administrative & General	9.0%	$7,825	$31.03	8.5%	$4,606	$16.63	7.0%	$6,055	$23.46	9.5%	$21,137	$85.76
Marketing	2.0%	$1,739	$6.90	7.0%	$3,793	$13.70	5.5%	$4,758	$18.44	3.5%	$7,787	$31.59
Franchise Fees	0.0%	$0	$0.00	5.4%	$2,929	$10.58	4.2%	$3,611	$13.99	0.0%	$0	$0.00
Utility Costs	4.0%	$3,478	$13.79	3.0%	$1,625	$5.87	2.0%	$1,730	$6.70	2.5%	$5,562	$22.57
Property Operations & Maintenance	3.5%	$3,043	$12.07	3.0%	$1,625	$5.87	3.0%	$2,595	$10.06	4.5%	$10,012	$40.62
TOTAL UNDISTRIBUTED OPERATING EXPENSES	18.5%	$16,084	$63.78	26.9%	$14,578	$52.65	21.7%	$18,749	$72.65	20.0%	$44,499	$180.54
Management Fees	2.0%	$1,739	$6.90	3.0%	$1,625	$5.87	3.0%	$2,595	$10.06	3.0%	$6,675	$27.08
GROSS OPERATING PROFIT	53.0%	$46,103	$182.82	50.0%	$27,097	$97.86	44.5%	$38,519	$149.25	32.9%	$73,095	$296.57
FIXED CHARGES												
Taxes	5.0%	$4,347	$17.24	5.0%	$2,709	$9.78	3.0%	$2,595	$10.06	3.0%	$6,675	$27.08
Insurance	1.4%	$1,217	$4.83	1.4%	$759	$2.74	0.8%	$692	$2.68	0.8%	$1,780	$7.22
Reserve for Replacement	2.0%	$1,739	$6.90	4.0%	$2,167	$7.83	4.0%	$3,460	$13.41	4.0%	$8,900	$36.11
NET OPERATING INCOME	44.6%	$38,800	$153.86	39.6%	$21,462	$77.51	36.2%	$31,304	$121.29	25.1%	$55,740	$226.16

Alternative Accommodations in the City of Napa

As part of the scope of this study, we were asked provide a broad assessment of the impact of alternative accommodation units on demand for traditional hotel rooms in the Napa lodging market. We evaluated this issue based upon our knowledge of the Napa lodging market as well as recently compiled survey data with respect to consumer utilization of alternative accommodation units other U.S. markets. The impact of alternative accommodations is difficult to validate due to the decentralized and private nature of this business. The findings incorporate available historical data on transient occupancy tax collections and the number of alternative accommodation units presently available in the Napa market into its analysis to the extent such data are available from the City of Napa.

Alternative accommodations includes a variety of lodging options for guests but primarily includes short-term and nightly rentals ranging from a room in a residence to homes, cabins, condos, castles, villas, barns, farm houses, and estates. Vacation rental options are not new to resort destinations and services such as VRBO (Vacation Rental by Owner) have been operating for over a decade. The booking of these rental options accelerated in the past 10 years with the launch of Airbnb, headquartered in San Francisco. Airbnb, launched in 2008, offers a booking platform for owners and tenants seeking to rent a room, a suite, or a house at their convenience. According to the Airbnb website, the service currently has 4 million listings in 65,000 cities in 191 countries and has booked over 260 million guests. In addition to private residents offering space in their homes, some hotel operators offer traditional hotel rooms on the service.

Homeaway based in Austin, Texas, is a booking site representing more 2 million short-term rental options in 190 countries, and is a part of the Expedia, Inc. family of brands. Homeaway was founded in 2005 has grown through the acquisition of over 20 booking website associated with short-term rentals including VRBO (Vacation Rental by Owner) and Bedandbreakfast.com.

These and other comparable booking services, are primarily used by leisure travelers but are aggressively seeking to expand their marketplace to commercial and group travelers. According to a 2017 study by Morgan Stanley Research, some 25 percent of leisure travelers and 23 percent of business travelers are expected to book a stay on Airbnb at least once during the year. Morgan Stanley reports that half of Airbnb guests used the service to replace a traditional hotel stay.

Since the explosion of short-term rentals from these services, affected businesses and government jurisdictions are instituting a variety of marketing and regulatory responses. Industry and government entities are pursuing legal measure to address concerns about the health and safety of the units, the collection of transient occupancy taxes, and the displacement and impact on rental rates of long-term residential rental housing. Many jurisdictions have or are considering implementing rules to limit the number of units, impose transient occupancy taxes, and require minimum life-safety standards for the venues. Even those jurisdictions with regulations addressing the services struggle with monitoring and compliance as “ghost” or illegally listed units continue to accommodate guests.

The city of Napa actively addressed the issue of short-term vacation rentals in 2009 with the establishment of a vacation-rental ordinance. The ordinance requires an annual registration fee and limits the number of units that can be rented for less than 30 days. The city restricts the number of units to 60 hosted properties (properties that can be rented when the owner is on site, these are typically rooms in someone's house) and 41 non-hosted properties.

Data on transient occupancy tax (TOT) collected for these units, provided by the city of Napa, is presented in the chart below for the fiscal years in which a full 12 months of data is available.

Transient Occupancy Tax Collection - Licensed short-term rentals						
	Vacation Rentals		Hosted Accommodations			
Fiscal Year Ending	Number of Units	TOT collected	Number of Units	TOT collected	Short-term rental TOT collected	% of total TOT
2010	44	$237,289			$237,289	2.9%
2011	44	254,035			$254,035	2.6%
2012	47	291,614			$291,614	2.5%
2013	43	316,383			$316,383	2.3%
2014	41	323,405			$323,405	2.1%
2015	43	346,868			$346,868	2.2%
2016	43	350,623			$350,623	1.9%
2017	40	373,155	55	$89,493	$462,648	2.4%

Source: City of Napa

Within the last five years, the TOT collected from the licensed short-term rentals has been within a relatively narrow range of 1.9 to to 2.4 percent of the total TOT received by the city.

Compared to the city of Napa, the cities of Yountville and Calistoga bar any short-term rental defined as less than 30 days, St. Helena only permits 25 units, and the city of American Canyon doesn't currently allow for home-based vacation rentals. The county of Napa does not allow rentals under 30 days. A search of available units in the Napa Valley on Airbnb and Homeaway shows about 300 available units for short-term rental on each site. These units, however, include more than just private facilities, including rooms in established bed and breakfasts, units in the Silverado Resort, and time-share units.

According to our understanding of the ordinance, non-traditional unit availability should be limited to those permitted units in the cities of St. Helena and Napa totaling 126 units. Relative to the over 5,000 established rooms in the county of Napa, the permitted short-term rentals represent an additional two percent of inventory. Given the strong market performance of Napa Valley lodging in recent years and the number of peak occupancy days, these units do not appear to be significantly impactful.

Meeting Space Analysis

A critical component of the lodging market in Napa Valley is the availability of adequate meeting space. Variously referred to as meeting space, function space, banquet space, or convention space, these facilities range from stand-alone banquet halls to large complexes within hotels. As described earlier in this market study, meeting space is an important component for the future development of Napa Valley's lodging market. Generally, meeting space in hotels consists of large multi-purpose rooms (ballrooms) and a number of smaller meeting rooms. Many ballrooms and meeting rooms are designed to be separated into smaller spaces as needed. Hotel demand at certain times of the year, particularly for the larger full-service properties, relies on the market's ability to accommodate large blocks of guestrooms booked to groups. Concurrently, these groups require a specific amount of meeting space to host functions.

Meeting space facilities can generally be categorized by the type and size of space as well as the type of usage. The meeting industry includes a variety of meeting types, ranging from large trade and exhibition events to corporate meetings and conferences. Each type of event has unique facility needs, with some requiring large amounts of contiguous space and others requiring many smaller meeting rooms. Often a single meeting will use many different types of space, including large exhibit halls, banquet facilities, breakout meeting rooms, and theater seating.

According to IBIS World, over the five years from 2012 to 2017, a slow economic recovery resulted in sluggish progress for the Trade Show and Conference Planning industry. During this period, business conditions improved, benefiting industry operators. Progress in the broader economy facilitated an expansion in marketing budgets, as large and small business, trade groups and even nonprofits turned to trade show and conference planners to increase sales and awareness. As a result, revenue for the Trade Show and Conference Planning industry is expected to grow at an annualized rate of 1.6% to $14.0 billion over the five years to 2017. Continued growth in corporate profit and a rise in business spending on marketing should further buoy industry revenue, which is expected to increase 2.4% in 2017.

The recent rise in conference and trade show attendance is a turnaround from recessionary years, when poor business conditions resulted in decreased demand from the industry's primary downstream markets and a drop in the average number of attendees. The Trade Show and Conference Planning industry experienced improvements in three of the past five years, largely due to modest growth in corporate profit, which grew at an annualized 0.8% over the five years to 2017. Often, conventions, conferences or trade shows are used as marketing tools to draw attention to specific products or services. As corporate profit margins have increased, companies have been more inclined to spend on all types of marketing strategies, including trade shows and conferences. In business-to-business events, such as trade association conventions, industry operators obtain a majority of revenue from booth fees, which vary depending on the type of event, the size and scale of the exhibit and the technology incorporated in the display. Industry operators also receive revenue from sponsorship fees, which are derived from the corporate underwriting of events, advertising fees and signage placement.

In addition, industry revenue growth has been aided by an increase in per capita disposable income, which bolstered consumer attendance for trade shows and conferences. Costs for conference attendance have increased with the bolstered attendance. The average cost per attendee for meetings and trade shows in the United States was ranges from $427 to $635 (as of mid-2017). And meeting costs continue to escalate.

The following chart summarizes the key attributes of various types of meetings, including facility requirements.

	Typical Attendance Range	Purpose	Required Facilities	Optional Facilities	Typical Facilty Used
Conferences/Conventions	200 to 50,000	Engagement in a common interest	Plenary Session Venue, breakout space, banquet space	Exhibition Space, Outdoor recreational venues, nearby restaurants for dine-	Convention Center or Major Convention Hotel
Meetings/Seminars/Networking Events	50 to 2,500	Training and Marketing	Meeting Space		Hotel/Resort or Smaller Convention Center
Team Building and Appreciation Events	50 to 500	Reward, training, and Entertainment	Meeting Space, Banquet Space, Entertainment and Recreational Venues	Nearby restaurants, spa, golf courses	Resort Hotel or Hotels in Resort Destinations
Trade and Consumer Shows	1,000 to 50,000	Sales	Exhibition Space and breakout space	Plenary Session Venue	Convetion Center, Trademart, Fairgrounds
Board Meetings and Executive Retreats	10 to 100	Engagement in a common interest	Meeting and Banquet Space	Nearby restaurants, recreational venue, spa, golf, attractions	Hotel/Resort with fine dining
Weddings/Social Events	Varies	Social	Banquet Space	Nearby restaurants, recreational venue, spa, golf, attractions	Hotel/Resort with fine dining or Venue with catering

Events within the exhibitions, conventions and meetings industry involve the gathering of groups of people for a common interest, such as business, industry, social/cultural, or hobbies. The American Express Global Meetings Forecast notes that meeting attendees emphasize quality of experience over length of meeting with expected rising demand for non-traditional meeting facilities rather than conventional meeting space. More scrutiny will be paid to making sure the meeting is attractive to the people that need to attend but overall meeting planners and decision makers expect that 2018 North American meeting budgets to be approximately 1.0 percent higher than 2017 with hotel group room rates to increase 3.5 percent.

Size parameters for the type of facilities and distribution of meeting space are highly influenced by the particular market demand in each location. Meeting space needs can range from 20 to 80 square per person depending on how many meeting and banquet activities are planned per meeting day in the same venue.

It is important to consider the limitations of meeting space. Typical meeting and event planners require full-service facilities that include on-site lodging facilities coupled with food and beverage services. Similar to event planners, convention planners who host events for 1,000 or more people expect a large selection of both full-service and limited-service hotels. Convention centers have large back-of-the-house areas available to accommodate food and beverage catering and audiovisual needs. Overall, for any type of large meeting conference or convention center to be successful, appropriate lodging and food and beverage facilities must be readily available.

The amount of meeting space in any particular property depends on that hotel's number of rooms, rooms size, bedding mix, location, and market orientation. Select-service and extended-stay hotels such as Hilton Garden Inns and Courtyard by Marriott typically have only one to three room bays of dedicated meeting space while full-service and resort hotels offer a much higher ratio of meeting space to number of rooms.

While the supply of existing and future meeting space in Napa Valley is readily identified, quantifying demand for the facilities is less specific. This section will begin with an inventory of the existing meeting space available. Then we will describe the new facilities that will have an impact on future meeting and conference space demand. Finally, we will examine how these additions to meeting space supply will affect the ratio of meeting space square footage to the marketwide supply of guestrooms.

Current Inventory of Meeting Space

Using selected industry publications and on-line services, the consultants have determined the current inventory of meeting space available in Napa Valley. We have allocated this information into three categories: lodging facilities, wineries, and exposition center/other. The "other" in the latter category refers to facilities such as large venues that are multi-purposed with large areas able to accommodate meetings and banquets. As its name implies it also includes the space available at the Napa Valley Exposition.

The following charts delineate Napa Valley's indoor meeting space by category. Note that meeting space in the wineries is an estimate only as will be explained later in this section.

Meeting Space by Venue

	Napa County	%	City of Napa	%	City as % of Total
Wineries	60,394	18.6%	21,432	9.4%	35%
Hotels	153,335	47.2%	95,660	41.9%	62%
Expo/Other	111,000	34.2%	111,000	48.7%	100%
Total	324,729	100.0%	228,092	100.0%	70%

Indoor Space Only

Currently, hotels contain the largest amount of indoor meeting space in Napa Valley, with roundly 153,000 square feet, or 47.2% of the total available space. The next largest category Expo/Other is comprised of the large venues – The Expo/Fairgrounds and Copia which will be discussed later. Wineries constitute the remaining portion of the available space, with approximately 60,000 square feet, or 19% of the total.

Winery Meeting Space

According to the Napa Valley Vintners Association, the Napa Valley hosts approximately 475 physical wineries. The Department of Alcoholic Beverage Control (ABC) issues more than 80 different types of licenses covering producers and sellers of alcoholic beverages. For example, three such permits relate most to vintners— type 02, for brick-and-mortar wineries; type 17, for beer and wine wholesalers; and type 20, for off-sale beer and wine. Some wineries operate with modest or no tasting facilities while others offer extensive food and beverage and event space to accommodate large groups. It is difficult to fully quantify event space at wineries. Many wineries offer only limited indoor space and offer primarily outdoor venue or covered areas. Private events are often restricted by licenses. Private events typically require some wine education component and only five wineries are fully licensed to specifically host weddings. However, these facilities often accommodate corporate luncheons or weekday dinner events with wine education programs.

Please note that many of these wineries have relatively small amounts of meeting space and that outdoor venues were not considered part of the analysis. The event space used in the study does not include all winery venues but is considered representative of the availability of potential for hosting meetings and parties. The sample of wineries used to allocate meeting space are listed below.

Napa County Wineries

Winery		Total Estimated Indoor Meeting Space (SF)	Total Estimated Outdoor Meeting Space (SF)
CADE Winery	Angwin	2,640	1,080
Clos Pegase Winery Calistoga	Calistoga	2,000	3,000
Hans Fahden Vineyards Calistoga	Calistoga	1,200	1,500
Markham Vineyards Calistoga	Calistoga	3,000	4,000
Sterling Vineyard Calistoga	Calistoga	2,000	3,500
Andretti Winery Napa	Napa	1,200	4,000
Artesa Vineyard and Winery	Napa	5,064	2,160
Bourassa Vineyards	Napa	0	0
Black Stallion Winery	Napa	2,976	2,400
Chimney Rock Winery Napa	Napa	550	2,500
Clos Du Val Wine Company Napa	Napa	750	1,000
Cuvaison Winery Calistoga	Napa	1,000	0
Domaine Carneros Napa	Napa	1,000	0
Frazier Winery Napa	Napa	1,000	0
Hess Collection, The Napa	Napa	1,000	1,000
Kenzo Estate	Napa	360	600
Newlan Vineyards & Winery (now Koves-Newlan) Napa	Napa	250	3,000
Odette Estate Winery	Napa	1,632	180
Pine Ridge Winery Napa	Napa	1,400	800
Sequoia Grove Vineyards Napa	Napa	400	1,500
Silverado Vineyards	Napa	1,200	600
Stag's Leap Wine Cellars Napa	Napa	1,000	0
Steltzner Vineyards Napa	Napa	400	450
William Hill Winery Napa	Napa	250	0
B Cellars	Oakville	900	0
Robert Mondavi Winery Oakville	Oakville	2,000	500
Silver Oak Cellars	Oakville	500	500
Cakebread Cellars St. Helena	Rutherford	600	768
Inglenook	Rutherford	2,592	1,560
Mumm Napa Valley Rutherford	Rutherford	1,000	500
Peju Province Rutherford	Rutherford	800	1,500
Round Pound Estate	Rutherford	1,080	720
Rutherford Grove Winery Rutherford	Rutherford	2,000	5,000
Rutherford Hill Winery Rutherford	Rutherford	800	1,000
Rutherford Ranch Winery	Rutherford	900	3,660
St. Supéry Wine Discovery Center & Winery Rutherford	Rutherford	1,200	3,000
Sullivan Vineyards Rutherford	Rutherford	1,000	3,000
Alpha Omega Winery	St. Helena	1,200	2,000
Charles Krug St. Helena	St. Helena	2,000	10,000
Duckhorn Wine Company Napa	St. Helena	1,000	0
Ehlers Estate St. Helena	St. Helena	0	1,000
Flora Springs Wine Company St. Helena	St. Helena	0	800
Franciscan Oakville Estate Yountville	St. Helena	750	0
Freemark Abbey St. Helena	St. Helena	500	500
Hall Wines	St. Helena	600	360
Kuleto Estate St. Helena	St. Helena	500	1,400
Merryvale Napa Valley St. Helena	St. Helena	1,200	1,200
Miner Family Vineyard St. Helena	St. Helena	500	750
Sutter Home Winery St. Helena	St. Helena	250	2,000
V. Sattui Winery Napa	St. Helena	1,000	1,300
Whitehall Lane Winery St. Helena	St. Helena	1,500	500
Domaine Chandon Napa	Yountville	1,000	500
Goosecross Cellars Rutherford	Yountville	750	750
TOTAL		**60,394**	**78,038**

The reader should note that restaurants and stand-alone tasting rooms were not inventoried. Although some restaurants are capable of hosting meetings, they are seldom marketed for more than social gatherings, usually lack in-house audiovisual and business services, and most often represent less-than-optimal space configurations.. Some of the wineries have dedicated banquet or meeting spaces while many of the wineries set up the events in the tasting rooms, caves, and cellars. Most wineries provide their capacity by number of guests. We have used a ratio of 12 square feet per guest to estimate the square footage.

Hotel Meeting Facilities

Lodging facilities in Napa Valley contain a variety of meeting space options. Generally, the amount of meeting space increases proportionately to the number of guestrooms. The majority of hotels surveyed offer meeting space in the range of 1,000 to 5,000 square feet. Only four properties offer 10,000 square feet or more. Meeting space is an important component for the larger hotels and generally serves to attract meetings during softer demand periods. Operators report hotel room rates associated with groups are lower than for transient guests, dictating the selective accommodation of groups. While larger meetings can only be accommodated by a limited number of hotels, most operators actively solicit small groups, particularly in the winter months. These groups are reported dominated by corporate retreats and board meetings. Social and weddings are selectively pursued during the year by those properties with ample event facilities at times when the guestroom rates that are garnered are commensurate or above the transient guestroom rates. Hotel meeting space is detailed in the following chart.

Hotels

Property	Location	Meeting Space	Guestrooms	Meeting Space SF to Guestroom
Doubletree Napa Valley	American Canyon	5,700	132	43
Fairfield Inn & Suites	American Canyon	650	80	8
Holiday Inn Express & Suites	American Canyon	1,740	101	17
Best Western Plus Stevenson Manor	Calistoga	240	34	7
Calistoga Motor Lodge & Spa	Calistoga	365	50	7
Calistoga Ranch	Calistoga	1,800	48	38
Calistoga Spa Hot Springs	Calistoga	1,250	57	22
Indian Springs Resort	Calistoga	3,200	116	28
Mountain View Hotel & Spa	Calistoga	330	33	10
Solage Calistoga	Calistoga	4,700	89	53
Andaz Napa	Napa	2,900	141	21
Archer Hotel	Napa	7,100	183	39
Carneros Resort & Spa	Napa	8,000	86	93
Churchill Manor	Napa	30	10	3
Embassy Suites	Napa	7,630	205	37
Hampton Inn & Suites	Napa	3,000	115	26
Hawthorn Suites	Napa	250	60	4
Hilton Garden Inn	Napa	1,200	80	15
Hotel Indigo	Napa	-	115	-
Napa River Inn	Napa	2,000	66	30
Napa Valley Marriott Hotel	Napa	10,200	275	37
Napa Winery Inn	Napa	1,500	60	25
River Terrace Inn	Napa	1,350	105	13
Senza Hotel	Napa	900	41	22
Silverado Resort and Spa	Napa	11,900	385	31
Southbridge Napa Valley	Napa	800	21	38
Springhill Suites	Napa	6,200	100	62
The Meritage Resort and Spa	Napa	25,000	322	78
The Westin Verasa Napa	Napa	5,700	180	32
Auberge du Soleil	Rutherford	3,500	50	70
Rancho Caymus Inn	Rutherford	900	26	35
Harvest Inn	St. Helena	4,000	74	54
Los Alcobas	St. Helena	4,500	68	66
Meadowood Napa Valley	St. Helena	3,600	85	42
Bardessono	Yountville	3,200	62	52
Hotel Yountville	Yountville	1,200	80	15
Napa Valley Lodge	Yountville	2,500	55	45
Vintage Estate Yountville	Yountville	14,300	192	74
Total - County		**153,335**	**3,982**	**39**
Total - City of Napa		**95,660**	**2,550**	**38**

Other Meeting Facilities

The CIA at Copia

The brainchild of Julia Child and Robert and Margrit Mondavi opened in 2001. The food and wine centric facility did not find its footing and was further challenged by the great recession. Closed since 2008, the former Copia: The American Center for Wine, Food & the Arts officially reopened in 2016 with a new name, the CIA at Copia, and a new commitment to public access. The name change reflects its current owners, the Culinary Institute of America, which acquired the property in late 2015 with an eye to freeing up space for its academic programs at its Greystone campus in St. Helena. The revived center offers daily cooking and wine-themed classes, a tasting showcase of local wineries that will rotate wineries every three months, a retail shop, and a redesigned, "more welcoming" restaurant, according to CIA Provost Mark Erickson.

Also being added are two free galleries: the Chuck Williams Culinary Museum, devoted to the collection of the late founder of Williams-Sonoma, and the Wine Hall of Fame. "They'll be exploratory experiences for visitors to learn about who shaped wine in America and about the history of food in America, and how it's been influenced by time and immigrations of cultures and tools."

Other renovations at the new CIA include windows on the lower level opening out to the river creating a light-filled, modern atrium in the center of the building available for evening receptions and can accommodate 800 guests in a standing reception or a 350-seat dinner. Upstairs, the former exhibit hall was turned into a teaching kitchen for hands-on cooking classes.

A mezzanine overlooking the atrium and the Napa River can host an event for up to 300. Adjacent to the mezzanine are two classrooms that can be used for breakout sessions, each seating 30. Outside, the newly terraced amphitheater seats 600 in rows or 375 at tables. Meeting spaces upstairs at CIA at Copia include the Food Business School classroom with 25 seats; the boardroom with 25 seats, reception space for 50 on the balcony and a garden balcony that will accommodate 80 seated and 120 standing. The main theater at Copia, used for movie screenings, speakers' series, and panel presentations, seats 250.

Napa Valley Exposition at the Fairgrounds

The only other significant amount of non-hotel conference space within the city is housed within the Napa Valley Exposition, located along the Silverado Trail between Third and Seventh streets. The Expo currently consists of four large buildings, which, in the aggregate, total approximately 31,000 square feet, located on ±34 acres.

Outdoor space consists of recreational vehicle (RV) sites, a livestock arcade, and large open fields designed to accommodate the needs of fairground activities. Currently, games of bingo are played at the Expo every day of the week, organized by non-profit organizations. Major events at the Expo include BottleRock, held on Memorial Day weekend, the Napa Town and Country Fair (the second week of August) and the Home and Garden Show in May. There are no hotel rooms available at the Expo, which hampers the facility's attractiveness to meeting planners and event organizers. Currently owned by the State of California, plans have been proposed to redevelop the property with upgraded meeting facilities, a small amount of residential mixed use development, and a new recreational vehicle facility. The timing of the proposed redevelopment is speculative at this time.

New Hotel Meeting Space Development

Based on our research, all of the proposed meeting space identified in Napa Valley is being constructed as part of the proposed lodging facilities. Several of the new hotels listed in the Supply of Lodging Facilities section of this study will feature meeting space that is currently unavailable in Napa Valley. We have used published and permitted space allocations and estimated as needed. The allocation of these spaces is shown in the following charts:

Proposed Meeting Space

Name	City	Number of Rooms	Meeting Space
Four Seasons Calistoga	Calistoga	83	7,540
Rosewood Calistoga Hills	Calistoga	110	4,464
Cambria Hotel	Napa	90	2,012
Embassy Suites Addition	Napa	54	4,045
Trinitas Planned Development	Napa	250	1,500
Napa River Inn Expansion	Napa	26	3,000
Stanley Ranch	Napa	132	15,500
Plenary Hotel	Napa	275	15,000
Ritz-Carlton Napa Valley	Napa	351	21,100
Meritage Expansion	Napa	145	10,000
Montalcino Resort	Napa County	379	34,000
Villagio Expansion	Yountville	1	4,000
Total County		2814	122,161
Total City		2187	72,157

If every property listed above is built, the new space will represent an 80% increase over the current county-wide inventory of existing hotel meeting space. The amount of meeting space increase in the city is slightly lower at 75 percent. The majority of the proposed meeting space is in large full-service hotels and resorts with ample room inventories. Note that a handful of these projects have been proposed for many years and specific development timelines are not fully confirmable at this time. We have estimated that some of the larger proposed resorts are speculative at this time and their development is not likely to occur in the next five to seven years. Generally we expect that new meeting space will be built apace with adequately supporting hotel rooms.

Conclusion

It is important to understand how meeting space relates to lodging demand. Meeting planners who plan on hosting an event lasting more than one day will require hotel rooms and most likely require food and beverage facilities; generally, this necessitates a full-service hotel. Currently the ratio of total venue space to guestrooms in the Napa Valley is approximately 64 square feet of meeting space per guestroom; that ratio is 93 square feet per guestroom for the city of Napa. Within the hotels in the market, the ratio is 39 square feet per guestroom in the county and 36 square feet per guestroom in the city.

Hotel industry benchmarks provide a framework for evaluating the appropriate amount of meeting space for proposed development. As discussed, focused-service and extended stay hotels are typically designed with only a modest complement of meeting space, often 5 to 15 square feet per guest room. Boutique, full-service, and resort hotels are frequently designed with significantly more meeting space, commonly 25 to over 50 square feet per guestroom.

Another measure of meeting space size is the ratio of meeting room capacity to guest rooms. In many markets, the size of the ballroom is important for annual civic, social, or corporate meetings. Other hotels are designed to attract corporate meetings; these hotels provide a number of smaller meeting or break-out rooms in addition to a ballroom. In general, meeting room capacity is benchmarked from 0.2 to 0.8 meeting guests to hotel rooms and ballrooms

are designed around 2 to 4 meeting guests to hotel rooms. Banquet style seating in a ballroom generally requires 10 square feet of space for each guest. The following chart illustrates estimates of meeting space for a 250- to 350-room full-service hotel.

These benchmarks are provided for informational purposes only. Actual meeting room space programming for a new hotel is dependent on numerous design, cost, market, and site issues. Effective ballroom operation requires proximate kitchen and service facilities. The meeting and ballroom space is optimal when free of columns and able to be designed with high ceiling heights. Parking for meeting space attendees needs to be considered.

Meeting space in Napa Valley has and is continuing to expand with the opening of full-service hotels in the city of Napa and the conversion of Copia to the CIA at Copia. The hotel occupancy levels of recent years indicate that the market is supported by the existing facilities. We estimate that the meeting and group guests represent approximately 13 percent of all occupied room nights.

During softer economic periods, meeting and group demand can be induced to bolster occupancy levels with the consideration of lower rates. During the period when the 2007 HVS Market Study was conducted, the hotel market in the Napa Valley was performing at a lower level than currently experienced and few full-service hotels were operating. As additional lodging facilities are built with appropriate meeting space, additional meeting and group demand can be accommodated. As a hedge for softer market cycles, we recommend that additional proposed full-service and resort hotels considered for development include an appropriate complement of meeting space.

Findings and Recommendations

Since the 2007 HVS Study, the Napa lodging market has shown strong growth in all measures supported by the continued appeal of the wine and food and beverage based attractions and the region's growing regional, national, and international reputation. The strength of demand for the market concurrent with the marketing efforts of organizations, attractions, hotels, and other stakeholders has demonstrated that the demand for lodging is less seasonal than in prior decades. While visitation to the Napa Valley will continue to be influenced by weather and lodging availability, the number of peak occupancy nights has expanded. The new supply open since 2010 and a strong economic environment has resulted in the growth of the overall market. The opening of new hotels is anticipated to sustain this trend providing additional capacity for transient and group guests.

Our findings indicate that assuming the current growth rate of demand is sustained, the market can absorb the noted pipeline of proposed hotels and should have capacity in the long-term to continue to support new hotel rooms as shown in the following chart.

Napa Valley Estimate of Additional Capacity

	Historical	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Estimated Available Rooms	5074.417	5,277	5,444	5,762	6,453	7,319	7,395	7,395	7,395	7,395	7,395
Estimated Available Annual Room Nights	1,852,162	1,926,257	1,987,212	2,103,282	2,355,497	2,671,587	2,699,327	2,699,327	2,699,327	2,699,327	2,699,327
Total Projected Potential Demand	1,327,822	1,382,957	1,439,520	1,527,776	1,702,043	1,883,390	1,935,765	1,975,091	2,015,442	2,056,845	2,099,332
Estimated Sustainable Annual Occupancy		72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Estimated Sustainable Annual Demand		1,386,905	1,430,793	1,514,363	1,695,958	1,923,543	1,943,516	1,943,516	1,943,516	1,943,516	1,943,516
Total Projected Potential Demand		1,382,957	1,439,520	1,527,776	1,702,043	1,883,390	1,935,765	1,975,091	2,015,442	2,056,845	2,099,332
less Est. Sustainable Annual Demand		1,386,905	1,430,793	1,514,363	1,695,958	1,923,543	1,943,516	1,943,516	1,943,516	1,943,516	1,943,516
Unsatisfied Annual Demand		(3,948)	8,727	13,413	6,086	(40,153)	(7,751)	31,576	71,927	113,330	155,817
Cumulative Potential Supply Expansion		**(11)**	**24**	**37**	**17**	**(110)**	**(21)**	**87**	**197**	**310**	**427**

As noted throughout the report, the number of potential new hotel rooms is not meant to be absolute but shows that additional lodging development should be considered. However, this study does not address the particular feasibility of the proposed lodging supply, either those projects in the pipeline or other future developments. Hotel development in the Napa Valley requires patience and capital. The following estimates of hotel development costs were compiled from budgets for comparable facilities in Northern California.

Estimated Representative Construction Costs per Room - Lodging Napa Valley

	Land	Hard Costs	FF&E	Soft Costs/Working Capital/OS&E	Total
B&B	$35,000	$115,000	$15,000	$10,000	$175,000
Limited Service	$40,000	$150,000	$20,000	$30,000	$240,000
Full Service	$100,000	$250,000	$25,000	$75,000	$450,000
Luxury	$125,000	$675,000	$150,000	$300,000	$1,250,000

Source: Cushman & Wakefield

The issue of feasibility of hotel projects in Napa can provide an inherent monitor on hotel development. The cost of land and construction in the area may be prohibitive for certain hotel product types to be feasibly developed. Some hotels may be more feasibly built as part of mixed-use projects with for sale real estate is happening with resorts proposed in various locations in the Valley. The availability of suitable sites, the cost of construction, environmental concerns, water and sewer access, combined with the social pressures of traffic, employment, and housing can delay projects or render them infeasible.

In addition, it is important to remember that hotel markets are cyclical and Napa is not immune to down cycles. The forecasts in this market study anticipate a sustained economic and social environment to support expansion of the destination. During softer periods, it is important to have a variety of lodging options to continue to attract guests. Changing demographics and social expectations are also impacting hotel development.

The continued investment in downtown Napa is enhancing the city as its own destination. Other locations such as Yountville and Calistoga are also evolving into their own attraction, on a par with already established reputation of St. Helena. As the individual destinations and the overall appeal of the valley has grown, challenges have continued to be felt, particularly concerning traffic, employees, and housing. The tensions between resources for residence and the appeal and financial benefits of tourism will require balanced consideration over the long-term while the area continues its evolution as a visitor destination.

Since 2010, a number of lodging facilities at various price points have opened in the City and County of Napa. These facilities offer a range of options for overnight visitors to the areas. It is our opinion that it remains important to continue to offer lodging units at all price points. Due to continually increasing construction costs, the feasibility of new hotel development can influence the types of hotels that are actually developed. Some products can offer brands and facilities that will attract guests to non-traditional or secondary locations. Hotel designs, brands, and offerings are now more expansive than ever and options for new hotel products that appeal to the changing demographics in the area should be considered to support the long-term health of the lodging market.

- Many of the new hotels that are proposed for the city of Napa are anticipated to be branded with major hotel brands. The benefits of brands include reservations systems, familiarity, loyalty programs, and well-designed facilities that can often support occupancy and rate levels that are quicker to ramp up and higher than independent properties. Hotel companies are supportive of incorporating local design and cultural themes into their branded hotels. While brands have to comply with certain corporate standards, they do not have to be cookie cutter. We recommend that whenever possible, the design of new hotels be built that reflect the wine country destination of Napa.

- Hotel products are changing with the shifts in demographics of visitors. Upscale hostels, wellness retreats, and lodging with communal public spaces and orientation to group activities are successfully being developed in other resort destinations. We also recommend that a wide variety of lodging products be considered for the market beyond the conventional categories considered in this study.

- Parking remains important for hotel use as a majority of users drive to Napa, however, the increase in ride-sharing services may change the behavior. The typical parking ratios to room is 1 parking space per room. Generally, parking can be somewhat reduced to account for annual occupancy levels in the 70 percent range. In addition, parking is often most used by hotel guests overnight and can be shared with other uses that are more daytime oriented. It is important that hotel projects have adequate parking to accommodate hotel guests and restaurant and meeting space users. Additional research on the impact of ride sharing and public transportation may be needed in the future.

- Meeting space in hotels is important to attracting demand for guest rooms, particularly during non-peak periods.

    - Limited-service hotels with meeting room space and close proximity to surrounding support services would be considered desirable. Bed and breakfasts and small inns as in-fill projects would be encouraged as indicated in the General Plan;

    - New hotel projects should provide a minimum of 15-50 square feet of contiguous meeting room space per guest room depending on the type of hotel and location to support group meeting demand.

Conclusion

The Napa Valley has seen a strong period of growth in the lodging market since 2010 and with the expectation that these trends continue, the market is expected to continue to support long-term growth. With a range of lodging products that target the evolving demographics of visitors to the destination, the lodging market is anticipated to continue to grow over the long-term. The existing pipeline of proposed lodging is estimated to be able to be absorbed over the next few years as market conditions allow. As new projects are considered for the longer term, we recommend a variety of lodging products be considered.

Assumptions and Limiting Conditions

"Report" means the appraisal or consulting report and conclusions stated therein, to which these Assumptions and Limiting Conditions are annexed.

"Property" means the subject of the Report.

"C&W" means Cushman & Wakefield, Inc. or its subsidiary that issued the Report.

"Consultant(s)" means the employee(s) of C&W who prepared and signed the Report.

The Report has been made subject to the following assumptions and limiting conditions:

- No opinion is intended to be expressed and no responsibility is assumed for the legal description or for any matters that are legal in nature or require legal expertise or specialized knowledge beyond that of a real estate appraiser.
- The information contained in the Report or upon which the Report is based has been gathered from sources the Consultant assumes to be reliable and accurate. The owner of the Property may have provided some of such information. Neither the Consultant nor C&W shall be responsible for the accuracy or completeness of such information, including the correctness of estimates, opinions, dimensions, sketches, exhibits and factual matters. Any authorized user of the Report is obligated to bring to the attention of C&W any inaccuracies or errors that it believes are contained in the Report.
- The opinions are only as of the date stated in the Report. Changes since that date in external and market factors or in the Property itself can significantly affect the conclusions.
- The Report is to be used in whole and not in part. No part of the Report shall be used in conjunction with any other analyses. Publication of the Report or any portion thereof without the prior written consent of C&W is prohibited. Reference to the Appraisal Institute or to the MAI designation is prohibited. Except as may be otherwise stated in the letter of engagement, the Report may not be used by any person(s) other than the party(ies) to whom it is addressed or for purposes other than that for which it was prepared. No part of the Report shall be conveyed to the public through advertising, or used in any sales, promotion, offering or SEC material without C&W's prior written consent. Any authorized user(s) of this Report who provides a copy to, or permits reliance thereon by, any person or entity not authorized by C&W in writing to use or rely thereon, hereby agrees to indemnify and hold C&W, its affiliates and their respective shareholders, directors, officers and employees, harmless from and against all damages, expenses, claims and costs, including attorneys' fees, incurred in investigating and defending any claim arising from or in any way connected to the use of, or reliance upon, the Report by any such unauthorized person(s) or entity(ies).
- Except as may be otherwise stated in the letter of engagement, the Consultant shall not be required to give testimony in any court or administrative proceeding relating to the Report.
- The forecasted potential gross income referred to in the Report may be based on lease summaries provided by the owner or third parties. The Report assumes no responsibility for the authenticity or completeness of lease information provided by others. C&W recommends that legal advice be obtained regarding the interpretation of lease provisions and the contractual rights of parties.
- The forecasts of income and expenses are not predictions of the future. Rather, they are the Consultant’s best opinions of current market thinking on future income and expenses. The Consultant and C&W make no warranty or representation that these forecasts will materialize. The real estate market is constantly fluctuating and changing. It is not the Consultant's task to predict or in any way warrant the conditions of a future real estate market; the Consultant can only reflect what the investment community, as of the date of the Report, envisages for the future in terms of rental rates, expenses, and supply and demand.
- If the Report is submitted to a lender or investor with the prior approval of C&W, such party should consider this Report as only one factor together with its independent investment considerations and underwriting criteria, in its overall investment decision. Such lender or investor is specifically cautioned to understand all Extraordinary Assumptions and Hypothetical Conditions and the Assumptions and Limiting Conditions incorporated in this Report.

- In the event of a claim against C&W or its affiliates or their respective officers or employees or the Consultants in connection with or in any way relating to this Report or this engagement, the maximum damages recoverable shall be the amount of the monies actually collected by C&W or its affiliates for this Report and under no circumstances shall any claim for consequential damages be made.
- If the Report is referred to or included in any offering material or prospectus, the Report shall be deemed referred to or included for informational purposes only and C&W, its employees and the Consultant have no liability to such recipients. C&W disclaims any and all liability to any party other than the party that retained C&W to prepare the Report.
- By use of this Report each party that uses this Report agrees to be bound by all of the Assumptions and Limiting Conditions, Hypothetical Conditions and Extraordinary Assumptions stated herein.
- The estimated operating results presented in this report are based on an evaluation of the overall economy, and neither take into account nor make provision for the effect of any sharp rise or decline in local or national economic conditions. To the extent that wages and other operating expenses may advance during the economic life of the property, we expect that the prices of rooms, food, beverages, and services will be adjusted to at least offset these advances. We do not warrant that the estimates will be attained, but they have been prepared on the basis of information obtained during the course of this study and are intended to reflect the expectations of typical investors.
- Forecasting for hotels is both a science and an art. Although this analysis employs various mathematical calculations to provide value indications, the final estimates are subjective and may be influenced by our experience and other factors not specifically set forth in this report.
- Our financial analyses are based on estimates and assumptions which were developed in connection with this appraisal engagement. It is, however, inevitable that some assumptions will not materialize and that unanticipated events may occur which will cause actual achieved operating results to differ from the financial analyses contained in this report, and these differences may be material. It should be further noted that we are not responsible for the effectiveness of future management and marketing efforts upon which the projected results contained in this report may depend.
- By use of this Report each party that uses this Report agrees to be bound by all of the Assumptions and Limiting Conditions, Hypothetical Conditions and Extraordinary Assumptions stated herein.

Certification of Appraisal

I certify that, to the best of our my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and is my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in any of the property that is the subject of this report, and no personal interest with respect to the parties involved.
- I have no bias with respect to any of the property that is the subject of this report or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.
- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute, which include the Uniform Standards of Professional Appraisal Practice.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- No one provided significant real property appraisal assistance to the persons signing this report.
- I have provided services regarding some of the properties in the county of Napa within the prior three years.
- These services include appraisals within the three-year period immediately preceding the acceptance of the assignment. No other services have been provided in the past three years.
- As of the date of this report, Elaine Sahlins, MAI, CRE, has completed the continuing education program for Designated Members of the Appraisal Institute.

Elaine Sahlins, MAI, CRE
Managing Director
State-Certified General Real Estate
Appraiser License No. AG002987
elaine.sahlins@cushwake.com
(415) 773-3531 Office Direct

Addenda Contents

Addendum A: Qualifications of The Appraisers
Addendum B: Letter of Engagement
Addendum C: Lodging Facilities by Category

Addendum A:
Qualifications of The Appraisers

Addendum B:
Letter of Engagement

Addendum C:
Lodging Facilities by Category

Lodging Inventory Napa Valley

Property Type	Property Name	Location	Number of Rooms	
B&B	Aurora Park Cottages	Calistoga	6	
B&B	Bear Flag Inn	Calistoga	5	
B&B	Brannan Cottage Inn	Calistoga	6	
B&B	Calistoga Arbors	Calistoga	4	
B&B	Calistoga Inn	Calistoga	17	
B&B	Calistoga Wayside Inn	Calistoga	4	
B&B	Calistoga Wine Way Inn	Calistoga	8	
B&B	Carlin Country Cottages	Calistoga	15	
B&B	CasaLana Bed & Breakfast	Calistoga	2	
B&B	Chateau de Vie	Calistoga	5	
B&B	Chelsea Garden Inn	Calistoga	5	
B&B	Chien Blanc Bungalows	Calistoga	3	
B&B	Churchill Manor B&B	Calistoga	10	
B&B	Cottage Grove Inn	Calistoga	16	
B&B	Craftsman Inn	Calistoga	5	
B&B	Embrace Calistoga	Calistoga	5	
B&B	Enchanted Cottage B&B	Calistoga	2	
B&B	Eurospa & Inn	Calistoga	13	
B&B	Fanny's	Calistoga	2	
B&B	Hillcrest Country Inn	Calistoga	3	
B&B	Hotel dAmici	Calistoga	4	
B&B	Larkmead Country Inn	Calistoga	4	
B&B	Mountain Home Ranch	Calistoga	20	
B&B	The Bergson	Calistoga	21	
B&B	The Pink Mansion	Calistoga	8	
B&B	Trailside Inn	Calistoga	3	
B&B	Villa Mimosa	Calistoga	3	
B&B	Washington Street Lodging	Calistoga	5	
B&B	Zinfandel House	Calistoga	2	
B&B	Mount View Hotel & Spa	Calistoga	31	237
B&B	Ink House Inn	St. Helena	5	
B&B	Adagio Inn	St. Helena	2	
B&B	Bartel's Ranch & B&B	St. Helena	4	
B&B	Black Rock Inn	St. Helena	5	
B&B	Hotel St. Helena	St. Helena	18	
B&B	Inn at Salvestrin	St. Helena	3	
B&B	Inn St. Helena	St. Helena	8	
B&B	Inn at Southbridge	St. Helena	21	
B&B	Judy's Bed and Breakfast	St. Helena	1	
B&B	Napa Farmhouse Inn	St. Helena	3	
B&B	Rustridge Ranch & Winery	St. Helena	4	
B&B	Shady Oaks Country Inn	St. Helena	3	
B&B	Wydown Hotel	St. Helena	12	
B&B	Spanish Villa Inn	St. Helena	3	
B&B	Raycho Caymus	Rutherford	26	
B&B	Poetry Inn	Unincorporated	5	

Lodging Inventory Napa Valley

Property Type	Property Name	Location	Number of Rooms
B&B	Lavendar, a Four Sisters Inn	Yountville	5
B&B	Mason Fleurie, Four Sisters Inn	Yountville	13
B&B	North Block Hotel	Yountville	20
B&B	Napa Valley Railway Inn	Yountville	8
B&B	Vaya former Oleander House	Yountville	5
B&B	Petis Logis Inn	Yountville	5
B&B	The Cottages of Napa Valley	Yountville	8
B&B	1801 Inn	Napa	8
B&B	Arbor Guest House	Napa	5
B&B	Beazley House B&B Inn	Napa	11
B&B	Bel Abri	Napa	15
B&B	Blackbird Inn	Napa	8
B&B	Candlelight Inn	Napa	11
B&B	Cedar Gables Inn	Napa	9
B&B	Churchill Manor B&B	Napa	10
B&B	Hennessey House B&B	Napa	10
B&B	Inn on First	Napa	10
B&B	Inn on Randolph	Napa	10
B&B	La Belle Epoque	Napa	6
B&B	La Petite Maison	Napa	4
B&B	Main Street Farmhouse B&B	Napa	4
B&B	McClelland-Priest B&B	Napa	6
B&B	Milliken Creek Inn & Spa	Napa	12
B&B	Napa Inn B&B	Napa	14
B&B	Old World Original B&B; Merlot & Cabernet Houses	Napa	14
B&B	Old World Inn: Cottages & Hotel Napa Valley	Napa	21
B&B	White House	Napa	17
B&B	Senza Hotel	Napa	41
B&B	Stahlecker House	Napa	5

Lodging Inventory Napa Valley

Property Type	Property Name	Location	Number of Rooms
LS	Fairfield Inn & Suites Napa American Canyon	American Canyon	80
LS	Holiday Inn Express & Suites Napa Valley American (	American Canyon	101
LS	Comfort Inn Calistoga Hot Springs Of The West	Calistoga	55
LS	Calistoga Spa Hotel Springs	Calistoga	57
LS	Dr Wilkinson's Hot Springs	Calistoga	42
LS	Golden Haven Spa Hot Springs	Calistoga	28
LS	Roman Spa	Calistoga	60
LS	Best Western Plus Stevenson Manor	Calistoga	34
LS	Wine Country Inn	St. Helena	29
LS	Vineyard Country Inn	St. Helena	21
LS	El Bonia Motel	St. Helena	48
LS	Napa Valley Lodge	Yountville	55
LS	3 Palms Napa Valley Hotel & Suites	Napa	45
LS	Motel 6 Napa	Napa	58
LS	Ascend Collection Hotel Napa Winery Inn	Napa	59
LS	Best Western Plus Inn @ The Vines	Napa	69
LS	Best Western Plus Elm House Inn	Napa	22
LS	Chablis Inn	Napa	34
LS	Hawthorn Suites by Wyndham Napa Valley	Napa	60
LS	Napa River Inn	Napa	66
LS	Chardonnay Lodge	Napa	19
LS	Discovery Inn	Napa	15
LS	Wine Valley Lodge	Napa	54
LS	Hampton Inn & Suites Napa	Napa	115
LS	Hotel Indigo	Napa	115
LS	Springhill Suites Napa Valley	Unincorporated	100
Full	Hilton Garden Inn Napa	Napa	80
Full	Doubletree Hotel & Spa Napa Valley American Canyo	American Canyon	132
Full	Dolce Silverado Resort	Unincorporated	370
Full	Marriott Napa Valley Hotel & Spa	Napa	275
Full	Hilton Garden Inn Napa	Napa	80
Full	Embassy Suites Napa Valley	Napa	205
Full	River Terrace Inn	Napa	106
Full	The Meritage Resort & Spa	Napa	322
Full	Calistoga Motor Lodge & Spa	Calistoga	50
Full	Westin Verasa Napa	Napa	180
Full	Andaz Napa	Napa	141
Full	Archer Hotel Napa	Napa	183

Lodging Inventory Napa Valley

Property Type	Property Name	Location	Number of Rooms
Luxury	Indian Springs Resort & Spa	Calistoga	115
Luxury	Calistoga Ranch Resort	Calistoga	50
Luxury	Solage Calistoga	Calistoga	89
Luxury	Auberge Du Soleil	Rutherford	50
Luxury	Harvest Inn	St. Helena	78
Luxury	Meadowood Resort	St. Helena	99
Luxury	Luxury Collection Las Alcobas Napa Valley	St. Helena	68
Luxury	Carneros Resort & Spa	Unicorporated	100
Luxury	Vintage Inn	Yountville	80
Luxury	Hotel Yountville	Yountville	80
Luxury	Villagio Inn & Spa	Yountville	112
Luxury	Bardessono Hotel	Yountville	62

bae urban economics

Memorandum

To: Rick Tooker, Community Development Director, City of Napa

From: Sherry Okun-Rudnak, Principal, BAE Urban Economics
Raymond Kennedy, Director of Research, BAE Urban Economics
Stephanie Hagar, Vice President, BAE Urban Economics

CC: Robin Schabes, Economic Development Manager, City of Napa
Robin Klingbeil, Senior Project Coordinator, Economic Development Division, City of Napa

Date: March 28, 2018

Re: Economic Impacts of New Lodging Facilities in Napa County

Introduction

The economies of the City of Napa and surrounding communities are heavily reliant on tourism. As the overall regional and national economy has grown in recent years, the City has seen significant growth in visitation and in the accommodation sector, and there are a number of lodging facility projects proposed for development over the next several years. Additional overnight visitors will generate new tax revenues for the City, including transient occupancy taxes and sales taxes, and will also generate and support numerous jobs, both directly and as these new facilities and their workers make purchases in the local economy. The following analysis assesses the general economic impacts of these proposed developments. In tandem with this analysis, BAE Urban Economics is undertaking a fiscal impact analysis and labor availability and housing affordability analysis.

Methodology and Assumptions

The analysis here used IMPLAN, a computer software package that automates the process of developing regional input-output models, in order to estimate the impacts in Napa County of proposed new lodging facilities in Napa City. Economic impacts include both jobs and economic activity arising from the new lodging facilities' **direct** spending for workers and goods/services, the **indirect** jobs and economic activity of local suppliers, and the **induced** spending on goods and services by worker households. Additional general information on the IMPLAN model is provided at the end of this memorandum.

For the analysis of the economic impacts of proposed new lodging facilities in Napa County using the IMPLAN model, BAE relied on source data on the Napa hotel market found in Cushman & Wakefield's *Draft Napa Valley Lodging Market Study*, completed in February 2018

for the City of Napa's Community Development Department. This report included relevant information on existing lodging conditions, including occupancy, revenues, employment per room, and the current inventory by type of facility, as well as projections of future trends in supply and demand in the City and County's lodging industry. In addition, to model other overnight visitor expenditures, this analysis relied in large part on the *2016 Visitor Profile Final Report of Findings*, completed by Destination Analysts, Inc. for Visit Napa Valley. Based on an extensive visitor survey, this report provides a wealth of information on tourism in the County, including daily expenditures of persons patronizing local lodging facilities.

Impact from Operations

This analysis describes the impacts related to lodging facility operations, as well as those linked to other expenditures by overnight visitors to Napa County. The analysis is based on a single point in time at the assumed buildout in 2023 per Cushman & Wakefield, albeit with dollar amounts in 2017/2018 dollars. As noted above, the hotel revenue and employment estimates are derived from Cushman & Wakefield, while other overnight visitor expenditures are estimated based on the visitor study completed for Visit Napa Valley, the official tourism marketing agency for the Napa Valley.

Table 1 presents estimates of the revenues to be generated by the new rooms added to the supply for the City of Napa from 2018 through 2023. Cushman & Wakefield estimate that a total of 2,112 units could be built from 2018 through 2023; these additional rooms are assumed to generate over $230 million annually in revenues.

Table 1: Annual Lodging Facility Revenues by Facility Type

Hotel Type/Revenue per Year per Available Room	B&Bs/ Small Inns	Limited/ Select Service	Full Service	Luxury Hotels/ Resorts
Rooms & Misc Revenue	$86,939	$53,254	$72,059	$162,964
Food and Beverage	$0	$0	$14,445	$59,530
Number of New Rooms, 2018-2023	*102*	*556*	*971*	*483*

Total New Hotel Revenues	B&Bs/ Small Inns	Limited/ Select Service	Full Service	Luxury Hotels/ Resorts
Rooms & Misc Revenue	$8,867,808	$29,609,375	$69,987,477	$78,711,517
Food and Beverage	$0	$0	$14,029,380	$28,753,065
Total	$8,867,808	$29,609,375	$84,016,857	$107,464,582

Sources: Cushman & Wakefield, *Napa Valley Lodging Market Study* , 2018; Visit Napa Valley, *2016 Visitor Profile Final Report of Findings* , completed by Destination Analysts, Inc.; U.S. Dept. of Labor, Bureau of Labor Statistics; BAE Urban Economics, 2018.

As shown in Table 2, the overnight guests in these new rooms are estimated to spend an additional $354 million annually in Napa County in addition to their hotel bookings, across a

broad range of expenditure categories including restaurants, wine purchases from stand-alone tasting rooms, wineries, and retail stores, transportation, apparel, and other retail purchases.[1]

[1] This table also provides taxable sales estimates for use in the fiscal analysis.

Table 2: Other Visitor Expenditures Generated by New Lodging Facilities

Expenditure Category	Daily Expenditures Per Person 2016 $ (a)	Daily Expenditures Per Person 2017 $ (b)	New Lodging Visitor Expenditures (c)	Taxable Percent of Sales (d)	Taxable Sales in County (e)	Percent of Taxable Sales in City (f)	Taxable Sales in City
Restaurants	$93.10	$96.10	$120,100,000	100%	$120,100,000	75%	$90,075,000
Wine (bottles purchased at wineries)	$70.89	$73.17	$91,400,000	100%	$91,400,000	0%	$0
Tastng room fees	$21.51	$22.20	$27,700,000	0%	$0	0%	$0
Entertainment & sightseeing	$13.32	$13.75	$17,200,000	0%	$0	0%	$0
Clothing & jewelry	$21.45	$22.14	$27,700,000	100%	$27,700,000	75%	$20,775,000
Other retail purchases	$16.48	$17.01	$21,300,000	100%	$21,300,000	75%	$15,975,000
Wine (bottles purchased at stand-alone tasting rooms)	$12.94	$13.36	$16,700,000	100%	$16,700,000	50%	$8,350,000
Gas, parking & local transportation	$7.89	$8.14	$10,200,000	80%	$8,160,000	75%	$6,120,000
Car rental (if rented in Napa only)	$4.67	$4.82	$6,000,000	100%	$6,000,000	100%	$6,000,000
Wine (bottles purchased at retail stores)	$3.18	$3.28	$4,100,000	100%	$4,100,000	75%	$3,075,000
All other	$9.26	$9.56	$11,900,000	0%	$0	75%	$0
Totals	**$274.69**	**$283.53**	**$354,300,000**		**$295,460,000**		**$150,370,000**

Assumptions		
Number of Estimated New Rooms (2018-2023)	2,112	from Cushman & Wakefield
Visitors per Room	2.3	from Visit Napa Valley
Number of Visitor Days	365	
Occupancy Factor	70.5%	estimate weighted by facility type, based on Cushman & Wakefield
Total Visitor Days	1,249,743	calculation
Days Spent in Napa Valley	3.0	from Visit Napa Valley
Number of Visitors	416,581	calculation
Annual Average CPI, 2016	266.344	U.S. Bureau of Labor Statistics
Annual Average CPI, 2017	274.924	U.S. Bureau of Labor Statistics
Inflation Factor, 2016-2017	1.032214	calculation

(a) From Cushman & Wakefield.
(b) Adjusted using the Consumer Price Index for the San Francisco Bay Area.
(c) Daily expenditures times total visitor days.
(d) Based on BAE estimate of type of items/services purchased.
(e) Per source of estimate (Cushman & Wakefield), assumes all expenditures are in Napa County.
(f) BAE estimate, based on location of facilities and visit patterns per Visit Napa Valley survey.

Sources: Cushman & Wakefield, *Napa Valley Lodging Market Study* , 2018; Visit Napa Valley, *2016 Visitor Profile Final Report of Findings* , completed by Destination Analysts, Inc.; U.S. Dept. of Labor, Bureau of Labor Statistics; BAE Urban Economics, 2018.

These direct revenues and expenditures then lead to additional purchases from local suppliers (indirect impacts) and by local households (induced impacts) as expenditures circulate through the local economy of Napa County, in an iterative fashion.[2] These purchases then support additional jobs in the City and County. As shown below, at buildout, new lodging facilities projected to be built in the City of Napa through 2023 are projected to generate more than 6,200 total jobs, over $318 million in worker compensation, and $761 million in total output. As might be expected, the most impacted sectors are related to the tourism economy in Napa, including restaurants, hotels and motels, and other food and drinking places, as well as wineries and various types of personal services and retail establishments.

Table 3: Impacts of Ongoing Operations of New Hotels at Buildout in Napa County

Summary Results

Impact Type	Employment (a)	Labor Income	Output
Direct Effect	4,556	$235,850,691	$534,461,615
Indirect Effect	747	$37,278,521	$96,528,180
Induced Effect	945	$45,307,772	$129,687,165
Total	**6,247**	**$318,436,984**	**$760,676,960**

Top Ten IMPLAN Sectors by Employment	Employment (a)	Labor Income	Output
Full-service restaurants	1,837	$75,920,684	$124,623,388
Hotels and motels, including casino hotels	1,028	$80,581,085	$222,179,404
All other food and drinking places	609	$23,718,745	$31,799,628
Personal care services	329	$9,462,642	$12,996,422
Other amusement and recreation industries	248	$8,180,834	$17,577,934
Wineries	227	$24,612,561	$92,519,502
Retail - Miscellaneous store retailers	214	$7,023,955	$11,346,789
Retail - Clothing and clothing accessories stores	166	$4,468,318	$14,770,777
Real estate	148	$4,728,151	$30,005,819
Retail - Food and beverage stores	92	$4,596,811	$8,772,844
Total for Top Ten Sectors	**4,899**	**$243,293,786**	**$566,592,506**

Notes:
Based on assumed "buildout" of 2,112 rooms per Cushman & Wakefield estimates. Direct lodging industry revenue, occupancy, employment estimates also from Cushman & Wakefield. Estimates of revenue for other sectors derived as shown in Table 2. All figures in 2018 dollars.
(a) All worker estimates by annual average workers, which may include both full and part-time jobs.

Sources: IMPLAN; Cushman & Wakefield, *Napa Valley Lodging Market Study*, 2018; Visit Napa Valley, *2016 Visitor Profile Final Report of Findings*, completed by Destination Analysts, Inc.; U.S. Dept. of Labor, Bureau of Labor Statistics; BAE Urban Economics, 2018.

Impact from Construction of New Lodging Facilities

In addition to the impacts from ongoing operations, the construction of new lodging facilities will support direct jobs and revenues during construction, as well as indirect jobs and sales at

[2] It should be noted that not all indirect revenues and expenditures will be local to Napa County. The IMPLAN model takes this into account. The numbers presented here are for the impacts within the County only.

local suppliers (e.g., building materials) and induced jobs and sales as worker households make purchases locally.

While there will be annual variations for these construction expenditures, the estimated economic impacts shown below are based on average expenditures derived from Cushman & Wakefield estimates for total hard costs. It is also assumed that on average, the construction of a lodging facility will take 12 months, and to be conservative, it is assumed that furniture, fixtures, and equipment (FF&E) and operating supplies and equipment (OS&E) are specialized items purchased outside Napa County. The results of the IMPLAN analysis are shown in Table 4 below. Based on annual average construction costs of approximately $136 million, the hotels assumed to be constructed from 2018 through 2023 will support 1,223 jobs and $185 million in total output annually. Most of these jobs will be the direct construction-related jobs.

Table 4: Annual Average Impacts of Construction of New Hotels in Napa County, 2018-2023

Summary Results

Impact Type	Employment (a)	Labor Income	Output
Direct Effect	890	$65,859,947	$135,965,673
Indirect Effect	86	$5,537,716	$15,053,935
Induced Effect	247	$11,836,649	$33,881,831
Total	**1,223**	**$83,234,311**	**$184,901,439**

Top Ten IMPLAN Sectors by Employment	Employment (a)	Labor Income	Output
Construction of new commercial structures	890	$65,859,947	$135,965,673
Real estate	20	$637,810	$4,047,672
Full-service restaurants	16	$676,273	$1,110,098
Limited-service restaurants	16	$461,126	$1,631,441
Architectural, engineering, & related services	15	$1,266,709	$2,470,526
Wholesale trade	14	$1,168,722	$3,463,113
Individual and family services	12	$253,326	$371,914
Other concrete product manufacturing	9	$576,505	$2,032,417
Employment services	8	$283,912	$565,968
Retail - General merchandise stores	8	$247,947	$656,297
Total for Top Ten Sectors	**1,009**	**$71,432,276**	**$152,315,118**

Notes:
Based on average annual costs over the 2018-2023 period per Cushman & Wakefield estimates. Soft costs assumed to be approximately 23% of hard costs. Excludes FF&E and OS&E. All figures in 2018 dollars.
(a) All worker estimates by annual average workers, which may include both full and part-time jobs. These are jobs supported during construction period only. Assumes 12-month construction period.

Sources: IMPLAN; Cushman & Wakefield, *Napa Valley Lodging Market Study*, 2018; BAE Urban Economics, 2018.

Summary of Economic Impacts

Based on the analysis above using the IMPLAN input-output model, new lodging facilities slated for construction in the City of Napa prior to 2024 will generate over 6,200 jobs and $761 million in annual ongoing economic output across all sectors of the Napa County economy. These permanent benefits will be focused in sectors related to the tourism economy, including restaurants and bars, lodging facilities, and wineries, and represent a six percent increase in employment and a five percent increase in Gross Regional Product over IMPLAN's 2016 baseline estimates for Napa County.

For these same lodging facilities, on average over the 2018 through 2023 period, construction activity will support 1,223 jobs and $185 million in output annually. Most of these short-term benefits will be in the construction sector.

Potential Outcomes from Reduced Buildout

The analysis presented in this memorandum is based on full buildout of the 2,112 hotel rooms in the development pipeline identified in the 2018 *Draft Lodging Market Study* prepared by Cushman & Wakefield, and therefore could overstate future economic impacts if this hotel pipeline is not fully built out by 2023. The City of Napa estimates that actual buildout by 2023 could total as few as 1,291 to 1,498 rooms, or approximately 60 to 70 percent of the possible 2,112-room buildout.

If actual buildout by 2023 is equal to approximately 60 to 70 percent of the projected 2,112-room buildout analyzed in this memo, the new hotels could generate an estimated 3,748 to 4,373 jobs and $456 million and $532 million in annual ongoing economic output. For these same lodging facilities, on average over the 2018 through 2023 period, construction activity could support an estimated 734 to 856 jobs and $111 to $129 million in output annually. These estimates assume that the mix of new hotels mirrors the mix of property types in the full buildout scenario provided by Cushman & Wakefield. To the extent that the mix of property types among hotels constructed by 2023 differs from the mix in the full buildout scenario, the economic impact could differ from these figures. For instance, if luxury hotels constitute a smaller share of the future hotel construction in Napa than anticipated in the Cushman & Wakefield full buildout scenario, the decline in economic impact could be more significant than estimated here. As shown in Table 1, luxury hotels generate more than twice the revenue per room generated by full service and limited/select service hotels, and nearly double the per-room revenue from B&Bs/small inns.

Table 5: Potential Economic Impact Based on City Buildout Estimates

Estimated Economic Impact	60 Percent Scenario	70 Percent Scenario
Ongoing Operations		
Employment (a)	3,748	4,373
Labor Income	$191,062,190	$222,905,889
Output	$456,406,176	$532,473,872
Construction		
Employment (b)	734	856
Labor Income	$49,940,587	$58,264,018
Output	$110,940,864	$129,431,007

Notes:
(a) All worker estimates by annual average workers, which may include both full and part-time jobs.
(b) All worker estimates by annual average workers, which may include both full and part-time jobs. These are jobs supported during the construction period only. Assumes 12-month construction period.
Sources: IMPLAN; Cushman & Wakefield, Napa Valley Lodging Market Study, 2018; Visit Napa Valley, 2016 Visitor Profile Final Report of Findings, completed by Destination Analysts, Inc.; U.S. Dept. of Labor, Bureau of Labor Statistics; City of Napa; BAE Urban Economics, 2018.

About the IMPLAN Input-Output Model

Economists use regional and national input-output models as a tool to understand the complex interactions among the various parts of an economy. The economic model used in this analysis, IMPLAN ("IMpact analysis for PLANning"), is a PC-based computer software package that automates the process of developing input-output models for regions within the United States. The IMPLAN model is well respected as an industry standard for projecting economic impacts resulting from current or future economic activities often called "events." In this study, the construction and operations of new lodging facilities make up the "events" that the analysis uses as the IMPLAN model's inputs.

At the heart of the IMPLAN model is a county-level trade flow called the Social Accounting Matrix (SAM) constructed from the production functions of 536 industries, using data from a variety of sources including the Bureau of Economic Analysis, Bureau of Labor Statistics, and US Census. The SAM uses each county's observed economic relationships between government, industry, and household sectors, allowing IMPLAN to model payments between industries, between households and industries, between government and industries, and between government and households. Thus, for the specified region of this analysis (Napa County), the input-output table accounts for all of the dollar flows between the different sectors within the economy. IMPLAN then applies county-level price and wage data, as well as considering the availability of goods within Napa County, to estimate the specific impacts to these areas.

Once the economic events have been entered into the model, IMPLAN reports the following types of impacts:

- **Direct Impacts**. Direct impacts refer to the set of producer or consumer expenditures applied to the predictive model for impact analysis. It is the amount of spending available to flow through the local economy. IMPLAN then displays how the local economy will then respond to these initial changes. The direct impacts may equal up to the amount of spending input into the model, depending on a variety of factors.
- **Indirect Impacts**. The indirect impacts refer to the impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to income and taxes. For capital projects this would include payments for construction inputs such as wood, steel, office supplies, and any other non-labor payments that a construction firm would purchase in the building process.
- **Induced Impacts.** The induced impacts refer to an economy's response to an initial change (direct impact) that occurs through re-spending of income according to household spending patterns. When households earn income, they spend part of that income on goods and services, such as food and healthcare. IMPLAN models households' disposable income spending patterns and distributes them through the local economy.

Once the model is applied, IMPLAN generates a series of output tables to show the direct, indirect, and induced impacts within each of the model's 536 sectors. For each of the direct, indirect, and induced impacts, IMPLAN generates values for three primary indicators of economic activity: output, employment, and labor income, defined as follows:

- *Employment* shows the number of workers needed to support the economic activity in the local economy. It should be noted that for annual impacts of ongoing operations, the employment figure shown represents the amount of employment needed to support that activity for a year. Thus, IMPLAN reports the total number of workers required to support the economic activity over the course of a year. In the case of a construction project, IMPLAN reports the number of workers needed to support the economic activity over the life of the project and, thus, it is necessary to divide the total number of employees who would be required to support the project by the estimated duration in years that the project would last. Furthermore, IMPLAN reports the number of jobs based on average output per worker for a given industry within the geography. This is not the same as the number of full-time positions.
- *Labor income* consists of employee compensation including wages, salaries, and additional benefits, as well as proprietor income (i.e., the profits earned by self-employed persons).
- *Output* refers to the total economic value of the project in the local economy.

bae urban economics

Memorandum

To: Rick Tooker, Community Development Director, City of Napa

From: Sherry Okun-Rudnak, Principal, BAE Urban Economics
Stephanie Hagar, Vice President, BAE Urban Economics
Chelsea Guerrero, Associate, BAE Urban Economics

CC: Robin Schabes, Economic Development Manager, City of Napa
Robin Klingbeil, Senior Project Coordinator, Economic Development Division, City of Napa

Date: March 28, 2018

Re: Napa hotel fiscal impact analysis

The City of Napa has a significant number of planned and proposed hotels in the development pipeline, which could add an estimated 2,112 hotel rooms to the City's inventory, thereby generating revenue for the City, supporting employment growth, and creating multiplier effects in the local economy, among other impacts. This memo presents the findings of an analysis conducted by BAE Urban Economics (BAE) to estimate fiscal revenue impacts resulting from the future development of the hotels in the known development pipeline. The analysis focuses on revenues to the City's General Fund, as this represents the portion of the City's budget that finances key public services. To pay for these services, the City's General Fund is dependent on discretionary revenue sources such as property taxes, transient occupancy taxes, sales taxes, and business license taxes. In addition to these annual ongoing revenues, this analysis estimates the one-time sales and use tax revenues that would accrue to the City's General Fund during construction of the proposed hotels each year between 2018 and 2023. In tandem with this analysis, BAE is undertaking an economic impact analysis and a labor availability and housing affordability analysis.

Methodology and Assumptions

This analysis is based on the known pipeline of new hotel rooms in the City of Napa at the time of this writing. Although the analysis assumes that all the hotel rooms in the known pipeline will come to fruition, the reality is that the specific timing and development details of individual projects are subject to change and extremely uncertain. It is possible that some projects in the known pipeline may not end up getting built at all.

This analysis relies in large part on information provided in the *Draft Lodging Market Study* that was prepared by Cushman & Wakefield in February 2018. BAE made use of Cushman &

Wakefield's revenue and occupancy forecasts, development cost estimates, and assumptions regarding the anticipated operating performance of the future hotels to estimate the fiscal revenue impacts of the proposed hotels. More information on the methodology that Cushman & Wakefield used to develop these assumptions and estimates can be found in the *Draft Lodging Market Study* report.

To show how General Fund revenues would be impacted over time, this analysis projects the General Fund revenues that would be generated by the proposed hotels in years 2018, 2020, and 2023. All revenue projections are expressed in constant 2018 dollars. Additional methodological details and assumptions are provided in the discussions of individual revenue sources below.

Hotel Development Pipeline

The current hotel development pipeline and known future application forecast includes 22 lodging properties that could add 2,112 new hotel rooms to the existing lodging supply in the City of Napa if fully built. The Cushman & Wakefield *Draft Lodging Market Study* provides estimates of the timing of development of these new rooms, which is reflected in Table 1 below. Table 1 shows the projected increase in new rooms in Napa by years 2018, 2020 and 2023 compared to the 2017 baseline inventory. As reported in the table, 189 rooms in the pipeline are expected to come to fruition in 2018. That number is anticipated to increase to 479 rooms by 2020, with possible build-out of the 2,112 rooms by 2023.

Table 1: Projected New Lodging Rooms by Hotel Type, City of Napa

	Projected Additional Hotel Rooms (a)		
Hotel Type	**2018**	**2020**	**2023**
B&Bs/Small Inns	9	67	102
Limited/Select Service	0	98	556
Full Service	181	314	971
Luxury Hotels and Resorts	0	0	483
Total New Hotel Rooms	**189**	**479**	**2,112**

Note:
(a) Additional hotel rooms compared to 2017 baseline inventory.
Sources: Cushman & Wakefield; BAE, 2018.

Annually Recurring General Fund Revenues

This section details the methodology for calculating the fiscal revenue impacts of new hotels in the development pipeline and describes their General Fund impacts in years 2018, 2020 and 2023.

Property Tax

The property tax revenues that accrue to a City are a function of assessed value of property subject to property tax and the City's share of the property tax collected for each parcel. Property in California is subject to a base 1.0 percent property tax rate, which is shared among

various local jurisdictions and special districts. Most properties are also subject to supplemental property taxes to pay for school district bonds or other restricted uses. This analysis evaluates impacts to the City's General Fund, which receives a share of the base 1.0 percent property tax but does not receive revenue from any supplemental taxes.

Table 2 shows the average estimated improvement and land valuation per room for each hotel segment, based on hard construction cost and land value estimates provided in the February 2018 *Draft Lodging Market Study*. As shown, the assessed value for the proposed hotel rooms is expected to range from an estimated $150,000 per room for bed and breakfasts and small inns to $800,000 per room for luxury hotels and resorts.

Table 2: Estimated Assessed Value per Room by Hotel Type, City of Napa

	Average Assessed Value per Room (a)		
Hotel Type	**Improvements** (b)	**Land**	**Total**
B&Bs/Small Inns	$115,000	$35,000	$150,000
Limited/Select Service	$150,000	$40,000	$190,000
Full Service	$250,000	$100,000	$350,000
Luxury Hotels and Resorts	$675,000	$125,000	$800,000

Note:
(a) Based on development cost estimates provided by Cushman & Wakefield, 2018.
(b) Projected assessed improvement value is based on hard construction costs.
Sources: Cushman & Wakefield; BAE, 2018.

Property tax revenue to the City from the proposed hotels will total an estimated $110,600 in 2018, $237,700 in 2020, and approximately $1.5 million in 2023, as shown in Table 3. These figures are based on the per-room assessed values shown in Table 2 and the projected buildout in each year, resulting in an estimated assessed value for the proposed hotels totaling $64.5 million in 2018, $138.7 million in 2020, and $847.3 million in 2023. Based on information provided by the Napa County Auditor-Controller, BAE estimates that the City of Napa will receive approximately 17.1 percent of the base 1.0 percent property tax revenue generated by the proposed hotels.[1]

[1] The share of property tax allocated to the City of Napa will depend on the Tax Rate Area (TRA) in which each hotel property is located. BAE's estimate of the City's share of property tax represents the average City share of the base 1% property tax in each of the TRAs where planned and proposed hotels would be located, weighted by the number of rooms, after accounting for ERAF.

Table 3: Projected Property Tax Revenue from Proposed Hotels, City of Napa

Assessed Value of Proposed Hotels	2018	2020	2023
B&Bs/Small Inns	$1,275,000	$10,050,000	$15,300,000
Limited/Select Service	$0	$18,620,000	$105,640,000
Full Service	$63,262,500	$109,987,500	$339,937,500
Luxury Hotels and Resorts	$0	$0	$386,400,000
Total Assessed Value	$64,537,500	$138,657,500	$847,277,500
Property Tax Revenue from Proposed Hotels			
Base 1% Property Tax Revenue	$645,375	$1,386,575	$8,472,775
Total Change in Property Tax Revenue	**$110,633**	**$237,694**	**$1,452,446**

Assumptions	
Projected AV per Room	
B&Bs/Small Inns	$150,000
Limited/Select Service	$190,000
Full Service	$350,000
Luxury Hotels and Resorts	$800,000
City of Napa Share of 1% Property Tax (a)	17.1%

Notes:
Figures in each year represent the impacts of all hotels added to the Citywide inventory, compared to 2017 baseline inventory.
(a) Represents the average City share of the base 1% property tax in each of the TRAs where planned and proposed hotels would be located, weighted by number of rooms, after accounting for ERAF.
Sources: Cushman & Wakefield; BAE, 2018.

Property Tax In-Lieu of Vehicle License Fees

Beginning in FY 2005-2006, the State ceased to provide "backfill" funds to counties and cities in the form of Motor Vehicle In-Lieu Fees (VLF) as it had through FY 2004-2005. As a result of the complicated financial restructuring enacted as part of the State's budget balancing process, counties and cities now receive revenues from the State in the form of what is known as property tax in-lieu of vehicle license fees, or ILVLF. This State-funded revenue source is tied to a city's total assessed valuation. In FY 2005-2006, former VLF revenues were swapped for ILVLF revenues, which set the local jurisdiction's ILVLF "base." The base increases each year thereafter in proportion to the increase in total assessed valuation within the jurisdiction. For example, if total assessed valuation increases by five percent from one year to the next, the ILVLF base and resulting revenues would increase by five percent.

ILVLF revenues from the proposed hotels would total approximately $557,600 per year to the City at full buildout of the 2,112 rooms. As shown in Table 4, in FY 2015-16 (the last year for which data are available), the City of Napa received ILVLF revenues of approximately $7.1 million. Based on the total citywide assessed value of approximately $10.7 billion, the ILVLF revenues were approximately equal to 0.066% of assessed value. Applying that ratio to the change in assessed value from the proposed hotels results in additional ILVLF revenues of approximately $42,500 in 2018, $91,300 in 2020, and $557,600 in 2023.

Table 4: Projected Property Tax In-Lieu of Vehicle License Fee Revenue from Proposed Hotels, City of Napa

ILVLF Impacts from Proposed Hotels	2018	2020	2023
Assessed Value of Proposed Hotels	$64,537,500	$138,657,500	$847,277,500
Total Change in ILVLF Revenue	**$42,473**	**$91,253**	**$557,610**

Assumptions	
ILVLF Payment, FY 2015-16	$7,072,588
Total Secured Assessed Value, FY 2015-16	$10,746,667,530
ILVLF as % of Total Assessed Value	0.066%

Note:
Figures in each year represent the impacts of all hotels added to the Citywide inventory, compared to 2017 baseline inventory.
Sources: City of Napa; BAE, 2018.

Sales Tax

The proposed hotels will generate sales tax to the City of Napa as hotel guests make taxable purchases in the City. Taxable transactions that occur in the City of Napa are subject to a 7.75-percent sales tax, which includes the 1.0 percent Bradley-Burns sales tax that accrues to the City of Napa General Fund.

As shown in Table 5, spending by overnight guests in new rooms would generate sales tax revenues totaling approximately $134,700 in 2018, $341,200 in 2020, and $1.5 million in 2023. Overnight guests in the proposed hotels are expected to increase spending in Napa County across a broad range of expenditure categories, including restaurants; wine purchases from stand-alone tasting rooms, wineries, and retail stores; transportation; apparel; and other retail purchases. As described more fully in the 2018 Napa Hotel Study Economic Impact Analysis, BAE estimated year 2023 expenditures of overnight guests in new rooms using data from Visit Napa Valley. BAE made assumptions regarding the typical share in each expenditure category that would be subject to sales tax and the share of taxable sales in each category that would occur within the City of Napa. For a full breakdown of the expenditure estimates, as well as the assumptions regarding the typical share in each category that would be subject to sales tax and the share in each category that would be expected to occur within the City of Napa, refer to Attachment Table A-1 at the end of this document. BAE prorated the total taxable sales estimate for 2023 based on the number of rooms added in each year to estimate total taxable sales in 2018 and 2020.

Table 5: Projected Sales Tax Revenue from Proposed Hotels, City of Napa

Sales Tax Impacts from Proposed Hotels	2018	2020	2023
Number of Proposed New Hotel Rooms	189	479	2,112
Taxable Expenditures in Napa by Guests in Proposed Hotels (a)	$13,472,611	$34,117,563	$150,370,000
City of Napa Sales Tax Revenue from Guests in Proposed Hotels	**$134,726**	**$341,176**	**$1,503,700**

Assumptions	
Annual Hotel Guest Taxable Sales in Napa per Hotel Room (a)	$71,189
City of Napa Sales Tax Revenue as a Share of Taxable Sale Price	1.0%

Notes:
Figures in each year represent the impacts of all hotels added to the Citywide inventory, compared to 2017 baseline inventory.
(a) Year 2023 Taxable sales estimate based on BAE analysis of data from Visit Napa Valley and the typical share of sales in each category that are subject to sales tax, as shown in the 2018 Napa Hotel Study Economic Impact Analysis. Taxable sales estimates for 2018 and 2020 are prorated based on 2023 total and number of rooms added in each year.
Sources: Visit Napa Valley; BAE, 2018.

Transient Occupancy Tax

As shown in Table 6, the proposed hotels would generate additional TOT revenues of approximately $1.7 million in 2018, $4.3 million in 2020, and $26.4 million in 2023.The City of Napa collects a transient occupancy tax (TOT) of twelve percent of gross room revenues from lodging establishments located in the City, which would constitute the primary source of revenue to the City from the proposed hotels.[2] To calculate the TOT revenues that would be attributable to the proposed hotels, BAE utilized occupancy and room rate forecasts that were prepared for hotels in the known development pipeline in the *Draft Lodging Market Study*. The occupancy rates, room rates (2018 dollars), and resulting total room revenues generated by each hotel segment are shown in Table 6.

[2] An additional 2% assessment is collected on behalf of the Tourism Improvement District (TID) to support local tourism programs and activities. These TID funds are reserved for specific uses and do not accrue to the City's General Fund and are therefore excluded from this analysis.

Table 6: Projected Transient Occupancy Tax Revenue from Proposed Hotels, City of Napa

Room Revenues (a)	**2018**	**2020**	**2023**
B&Bs/Small Inns			
Net New Rooms	9	67	102
Average Daily Rate	$326.04	$332.40	$332.40
Occupancy	65%	63%	64%
RevPar (b)	$211.86	$210.37	$212.74
Annual Room Revenues	$657,286	$5,144,527	$7,920,200
Limited/Select Service			
Net New Rooms	-	98	556
Average Daily Rate	-	$224.32	$224.32
Occupancy	-	77%	73%
RevPar (b)	$0.00	$173.38	$163.87
Annual Room Revenues	$0	$6,201,661	$33,256,214
Full Service			
Net New Rooms	181	314	971
Average Daily Rate	$288.25	$296.70	$296.70
Occupancy	70%	72%	70%
RevPar (b)	$200.63	$212.41	$207.51
Annual Room Revenues	$13,236,054	$24,363,840	$73,562,428
Luxury Hotels and Resorts			
Net New Rooms	-	-	483
Average Daily Rate	-	-	$855.99
Occupancy	-	-	70%
RevPar (b)	$0.00	$0.00	$599.19
Annual Room Revenues	$0	$0	$105,634,496
TOT Revenue Impacts from Proposed Hotels			
Total Annual Room Revenues	$13,893,340	$35,710,028	$220,373,337
City of Napa TOT Rate (c)	12%	12%	12%
Total Change in TOT Revenue	**$1,667,201**	**$4,285,203**	**$26,444,800**

Notes:
All figures reported in 2018 dollars. Figures in each year represent the impacts of all hotels added to the Citywide inventory, compared to 2017 baseline inventory.
(a) Average daily rate and occupancy rates are estimates from Cushman & Wakefield, 2018.
(b) Revenue per available room (RevPAR) is calculated by multiplying the average daily rate by the average occupancy. This figure represents the average daily revenue for rooms after accounting for vacancy.
(c) An additional 2% assessment is collected on behalf of the Tourism Improvement District (TID) to support local tourism activities. These TID funds are reserved for specific uses and do not accrue to the City's Genera Fund, and are therefore excluded from this analysis.
Sources: City of Napa; Cushman & Wakefield; BAE, 2018.

Business License Tax

As shown in Table 7, the proposed hotels would generate additional business license revenues of approximately $18,100 in 2018, $43,700 in 2020, and $296,700 in 2023. Napa assesses business license fees on businesses that operate within City limits, with different fee rates based on the type of business. Hotels and motels are assessed business license fees annually at a rate of $1.00 per every $1,000 in gross annual receipts. To estimate total gross annual receipts of proposed hotels in the pipeline, BAE relied on sample operating statements

provided by Cushman & Wakefield that provided estimates of the total share of non-room revenue that would typically be generated by hotels in each segment. BAE used the ratio of rooms revenue to total operating revenue to estimate the total revenue of the proposed hotels in years 2018, 2020, and 2023.

Table 7: Projected Business License Fee Revenue from Proposed Hotels, City of Napa

Annual Room Revenue	**2018**	**2020**	**2023**
B&Bs/Small Inns	$657,286	$5,144,527	$7,920,200
Limited/Select Service	$0	$6,201,661	$33,256,214
Full Service	$13,236,054	$24,363,840	$73,562,428
Luxury Hotels and Resorts	$0	$0	$105,634,496
Total Annual Hotel Revenue			
B&Bs/Small Inns	$670,700	$5,249,517	$8,081,836
Limited/Select Service	$0	$6,308,913	$33,831,347
Full Service	$17,438,807	$32,099,921	$96,920,195
Luxury Hotels and Resorts	$0	$0	$157,899,097
Business License Revenue from Proposed Hotels			
Total Annual Hotel Revenue from Proposed Hotels	$18,109,507	$43,658,351	$296,732,474
Total Business License Revenue from Proposed Hotels (a)	**$18,110**	**$43,658**	**$296,732**
Assumptions			
Room Revenue as a Share of Total Revenue (b)			
B&Bs/Small Inns	98.0%		
Limited/Select Service	98.3%		
Full Service	75.9%		
Luxury Hotels and Resorts	66.9%		

Notes:
All figures in 2018 dollars. Figures in each year represent the impacts of all hotels added to the Citywide inventory, compared to 2017 baseline inventory.
(a) Hotels and motels in the City of Napa are subject to annual business license fees equal to $1 per $1,000 of gross annual receipts.
(b) Estimate provided by Cushman & Wakefield, 2018. Estimate reflects the general operating revenue performance of a given hotel segment.
Sources: City of Napa; Cushman & Wakefield; BAE, 2018.

Summary of Annually Recurring General Fund Revenues

Table 8 summarizes the projected General Fund revenue impacts in the three years covered by the preceding analysis. As shown in the table, the proposed hotels would increase General Fund revenues by approximately $2.0 million in 2018. This number would increase to just under $5.0 million in 2020. At full buildout of the existing hotel pipeline, the proposed hotels would generate approximately $30.3 million annually in new revenues to the City's General Fund.

Table 8: Summary of General Fund Revenues from Proposed Hotels, City of Napa

Revenue Source	2018	2020	2023
Property Tax	$110,633	$237,694	$1,452,446
ILVLF	$42,473	$91,253	$557,610
Sales Tax	$134,726	$341,176	$1,503,700
Transient Occupancy Tax	$1,667,201	$4,285,203	$26,444,800
Business License Tax	$18,110	$43,658	$296,732
Total General Fund Revenues	**$1,973,143**	**$4,998,984**	**$30,255,288**
General Fund Revenues per Room	**$10,426**	**$10,431**	**$14,324**

Source: BAE, 2018.

One-Time General Fund Revenues from Construction

Development of the proposed hotels will generate sales and use taxes from construction materials and furniture, fixtures, and equipment (FF&E). Sales and use taxes from construction typically accrue to the county sales and use tax pool, unless the construction contractor obtains a seller's sub-permit for the project site.[3] For the purposes of this analysis, BAE conservatively assumed that the contractors hired to construct the proposed hotels will not obtain seller's sub-permits to designate the City of Napa as the point of sale, and therefore sales and use taxes from construction materials and FF&E will accrue to the County pool.

BAE calculated the total taxable hard construction costs and costs for FF&E for hotels in each segment using the development cost estimates provided by Cushman & Wakefield shown in Table 9. Based on BAE experience with prior projects, BAE estimated that approximately half of the total hard construction costs would be comprised of taxable materials, with the remainder comprised of construction labor not subject to sales or use tax. Soft construction costs were excluded, as these costs are typically not subject to sales or use tax.

Table 9: Taxable Materials and FF&E Costs by Hotel Type, City of Napa

Hotel Type	Hard Cost per Room (a)	Taxable Materials Cost per Room (b)	FF&E Cost per Room (a)	Total Taxable Materials & FF&E Costs per Room
B&Bs/Small Inns	$115,000	$57,500	$15,000	$72,500
Limited/Select Service	$150,000	$75,000	$20,000	$95,000
Full Service	$250,000	$125,000	$25,000	$150,000
Luxury Hotels and Resorts	$675,000	$337,500	$150,000	$487,500

Notes:
(a) Estimates provided by Cushman & Wakefield, 2018.
(b) Represents the portion of overall hard costs that would be subject to sales and use taxes. Analysis assumes 50 percent of total hard costs are paid to materials.
Sources: Cushman & Wakefield; BAE, 2018.

[3] Contractors can obtain a seller's sub-permit only if the value of the contract totals $5 million or more.

Based on the total taxable costs shown in Table 9, taxable materials and FF&E costs for the proposed hotels are expected to equal approximately $441.4 million. Consequently, over the course of the buildout period, construction activity from the proposed hotels would generate approximately $4.4 million in total construction-related sales and use taxes (one percent of $441.4 million) to the County sales and use tax pool. The share of the $4.4 million in use taxes that would accrue to the City of Napa would depend on the City's share of total countywide taxable sales at the time of construction. As of the third quarter of 2017, the City's share of the sales and use tax in the Countywide pool was 45.4 percent. Based on this proportion, the City of Napa could expect to receive approximately $2.0 million of the $4.4 million in construction-related use taxes generated by the proposed hotels over the entire course of the full buildout period (years 2018 to 2023), as shown in Table 10.

Table 10: Construction Sales and Use Taxes from Proposed Hotels, 2018-2023

Hotel Rooms Added to Citywide Inventory	2018	2019	2020	2021	2022	2023	Total 2018-2023
B&Bs/Small Inns	9	22	37	35	0	0	102
Limited/Select Service	0	0	98	276	108	74	556
Full Service	181	102	32	382	275	0	971
Luxury Hotels and Resorts	0	0	0	0	483	0	483
Total	189	124	167	693	866	74	2,112
Taxable Materials from Construction							
B&Bs/Small Inns	$616,250	$1,595,000	$2,646,250	$2,537,500	$0	$0	$7,395,000
Limited/Select Service	$0	$0	$9,310,000	$26,220,000	$10,260,000	$7,030,000	$52,820,000
Full Service	$27,112,500	$15,225,000	$4,800,000	$57,300,000	$41,250,000	$0	$145,687,500
Luxury Hotels and Resorts	0	0	0	0	235,462,500	0	235,462,500
Total Taxable Materials & FF&E Costs	27,728,750	16,820,000	16,756,250	86,057,500	286,972,500	7,030,000	441,365,000
Sales and Use Taxes from Construction							
1% Bradley-Burns Sales & Use Tax to County Pool	$277,288	$168,200	$167,563	$860,575	$2,869,725	$70,300	$4,413,650
City of Napa Sales & Use Tax Revenue	**$125,954**	**$76,402**	**$76,113**	**$390,904**	**$1,303,532**	**$31,933**	**$2,004,839**

Assumptions	
Taxable Materials from Construction	
B&Bs/Small Inns	$72,500
Limited/Select Service	$95,000
Full Service	$150,000
Luxury Hotels and Resorts	$487,500
City of Napa Share of County Sales and Use Tax Pool (a)	45.4%

Note:
(a) Based on the City's share of the County pool in the third quarter of 2017.
Sources: Cushman & Wakefield; BAE, 2018.

Potential Outcomes from Reduced Buildout

The analysis presented in this memorandum is based on full buildout of the 2,112 hotel rooms in the development pipeline identified in the 2018 *Draft Lodging Market Study* prepared by Cushman & Wakefield, and therefore could overstate future revenues if this hotel pipeline is not fully built out by 2023. The City of Napa estimates that actual buildout by 2023 could total as few as 1,291 to 1,498 rooms, or approximately 60 to 70 percent of the possible 2,112-room buildout.

If actual buildout by 2023 is equal to approximately 60 to 70 percent of the projected 2,112-room buildout analyzed in this memo, the annual General Fund revenues to the City from the new hotels could total an estimated $18.2 million to $21.2 million. The one-time General Fund revenues to the City from construction use taxes could total an estimated $1.2 million to $1.4 million between 2018 and 2023. These estimates assume that the mix of new hotel property types mirrors the mix of property types in the full buildout scenario provided by Cushman & Wakefield. To the extent that the mix of property types among hotels constructed by 2023 differs from the mix in the full buildout scenario, the fiscal impact could differ from these figures. For instance, if luxury rooms constitute a smaller share of future hotel construction in Napa than anticipated in the Cushman & Wakefield full buildout scenario, the annual revenues to the City could be lower than estimated here. As shown in Table 6, luxury hotels generate almost half of the room revenues and associated transient occupancy tax from the 2,112 proposed hotels.

Summary of Findings

The data and analysis presented in this memorandum support the following findings (all figures in 2018 dollars):

At full buildout, the proposed hotels would generate approximately $30.3 million per year in revenue to the City of Napa, mostly from transient occupancy tax. Revenues to the City would include approximately $26.4 million in transient occupancy tax, $2.0 million in property tax and property tax in-lieu of vehicle license fees, $1.5 million in sales tax revenues, and $297,000 in business license fee revenue. These revenues would recur on an ongoing annual basis following full buildout and stabilization, assuming continued operation at 2023 rent and occupancy levels.

The annual revenues to the City would increase during the buildout period as more hotels are constructed and achieve stabilized operations. Estimated revenues from transient occupancy tax, property tax, property tax in-lieu of vehicle license fees, sales tax, and business license fees during the buildout period would total approximately $2.0 million in 2018, $5.0 million in 2020, and $30.3 million in 2023.

In addition to these ongoing annual revenues, construction of the proposed hotels would generate construction use taxes, some of which would accrue to the City. Between 2018 and

2023, the City will receive an estimated total of $2.0 million in sales and use taxes from construction if all proposed hotels are constructed. These one-time revenues resulting from construction activity would not recur in following years after hotels are built. Estimated use tax revenues from hotel construction in individual years between 2018 and 2023 would vary substantially, from an estimated $32,000 in 2023 to $1.3 million in 2022.

Revenues to the City from a partial buildout scenario could be considerably lower than the revenues from full buildout of the hotel pipeline. City staff estimate that approximately 60 to 70 percent of the 2,112 rooms analyzed in this memorandum will be built. This reduced buildout scenario could generate an estimated $18.2 million to $21.2 million in annual revenues to the City and $1.2 million to $1.4 million in one-time construction use taxes to the City during the buildout period. Actual revenues to the City could be further reduced from the estimated revenues from full buildout if the hotel properties that are constructed include a lower proportion of luxury properties than are included in the full buildout scenario.

Attachment A: Visitor Expenditures

Table A-1: Visitor Expenditures Generated by New Lodging Facilities

Expenditure Category	Daily Expenditures Per Person 2016 $ (a)	Daily Expenditures Per Person 2017 $ (b)	New Lodging Visitor Expenditures (c)	Taxable Percent of Sales (d)	Taxable Sales in County (e)	Percent of Taxable Sales in City (f)	Taxable Sales in City
Restaurants	$93.10	$96.10	$120,100,000	100%	$120,100,000	75%	$90,075,000
Wine (bottles purchased at wineries)	$70.89	$73.17	$91,400,000	100%	$91,400,000	0%	$0
Tastng room fees	$21.51	$22.20	$27,700,000	0%	$0	0%	$0
Entertainment & sightseeing	$13.32	$13.75	$17,200,000	0%	$0	0%	$0
Clothing & jewelry	$21.45	$22.14	$27,700,000	100%	$27,700,000	75%	$20,775,000
Other retail purchases	$16.48	$17.01	$21,300,000	100%	$21,300,000	75%	$15,975,000
Wine (bottles purchased at stand-alone tasting rooms)	$12.94	$13.36	$16,700,000	100%	$16,700,000	50%	$8,350,000
Gas, parking & local transportation	$7.89	$8.14	$10,200,000	80%	$8,160,000	75%	$6,120,000
Car rental (if rented in Napa only)	$4.67	$4.82	$6,000,000	100%	$6,000,000	100%	$6,000,000
Wine (bottles purchased at retail stores)	$3.18	$3.28	$4,100,000	100%	$4,100,000	75%	$3,075,000
All other	$9.26	$9.56	$11,900,000	0%	$0	75%	$0
Totals	**$274.69**	**$283.53**	**$354,300,000**		**$295,460,000**		**$150,370,000**

Assumptions		
Number of Estimated New Rooms (2018-2023)	2,112	from Cushman & Wakefield
Visitors per Room	2.3	from Visit Napa Valley
Number of Visitor Days	365	
Occupancy Factor	70.5%	estimate weighted by facility type, based on Cushman & Wakefield
Total Visitor Days	1,249,743	calculation
Days Spent in Napa Valley	3.0	from Visit Napa Valley
Number of Visitors	416,581	calculation
Annual Average CPI, 2016	266.344	U.S. Bureau of Labor Statistics
Annual Average CPI, 2017	274.924	U.S. Bureau of Labor Statistics
Inflation Factor, 2016-2017	1.032214	calculation

(a) From Cushman & Wakefield.
(b) Adjusted using the Consumer Price Index for the San Francisco Bay Area.
(c) Daily expenditures times total visitor days.
(d) Based on BAE estimate of type of items/services purchased.
(e) Per source of estimate (Cushman & Wakefield), assumes all expenditures are in Napa County.
(f) BAE estimate, based on location of facilities and visit patterns per Visit Napa Valley survey.

Sources: Cushman & Wakefield, *Napa Valley Lodging Market Study* , 2018; Visit Napa Valley, *2016 Visitor Profile Final Report of Findings* , completed by Destination Analysts, Inc.; U.S. Dept. of Labor, Bureau of Labor Statistics; BAE Urban Economics, 2018.

bae urban economics

Memorandum

To: Rick Tooker, Community Development Director, City of Napa

From: Sherry Okun-Rudnak, Principal, BAE Urban Economics
Stephanie Hagar, Vice President, BAE Urban Economics
Laura Sellmansberger, Associate, BAE Urban Economics

CC: Robin Schabes, Economic Development Manager, City of Napa
Robin Klingbeil, Senior Project Coordinator, Economic Development Division, City of Napa

Date: March 28, 2018

Re: Hotel Industry Labor Availability and Housing Affordability Analysis

Introduction

The City of Napa has a significant number of planned and proposed hotels in the development pipeline, which could add an estimated 2,112 hotel rooms to the City's inventory and support an increase in hotel employment in the City. In February 2018, Cushman & Wakefield completed the *Draft Napa Valley Lodging Market Study* for the City of Napa's Community Development Department. This report included information on existing lodging conditions, including occupancy, revenues, employment per room, and the current inventory by type of facility, as well as projections of future trends in supply and demand in the City and County's lodging industry. Among other findings, the draft study found that "The availability of employees to fill service level and managerial positions is a consistent anxiety of hotel operators and is impacted by the cost of housing in the area relative to the pay scale for hotel employees." While these trends are expected to continue, the study reported that developers have continued to pursue new hotel projects and these trends have not prevented hotels from operating successfully. The following analysis evaluates some of the challenges associated with attracting a hotel labor pool within the high-cost housing market in the Napa region and the wider Bay Area region, as well as the extent to which the housing market in Napa and the surrounding area may be able to absorb the new employee households that the new hotels will generate.

Methodology and Assumptions

The analysis presented in this memorandum evaluates potential future hotel worker demand, the availability of hotel workers within the existing labor pool, estimated hotel worker wages

and household incomes, and housing costs within the local commute shed. The analysis uses data from the following sources:

- The February 2018 Cushman & Wakefield Napa Valley Lodging Market Study provided the number of hotel rooms in each hotel category currently proposed in the City of Napa.
- The City of Napa provided information on the number of units in the City's market-rate residential development pipeline as well as affordable units in the pipeline for Napa and other cities in Napa County.
- The U.S. Bureau of Labor Statistics (BLS) provided statistics about the Napa County labor force, including the distribution of hotel jobs among various job categories and the average incomes earned by workers in those categories. BAE used these job category distribution percentages and mean wages to estimate the wages of hotel workers in Napa County.
- This analysis uses the BLS Consumer Price Index (CPI) Calculator to adjust the BLS May 2016 wage estimates to 2017 dollars.
- This analysis uses data from the U.S. Census Bureau American Community Survey (ACS) and Esri regarding average household sizes and unemployment rates for the City of Napa and the communities within commuting distance of the City of Napa.
- To determine the wage and area median income (AMI) distribution of hotel employee households in Napa, BAE prepared cross tabulations of Public Use Microdata Samples (PUMS) from the 2011-2015 American Community Survey.
- This analysis uses 2017 household income limits set by the California Department of Housing and Community Development (HCD) and uses housing affordability guidelines set by the U.S. Department of Housing and Urban Development (HUD).
- The Workforce Alliance of the North Bay provided information about the number of union hotel workers in Napa County via Emsi, a labor force statistics database curated from government data sources that include the BLS Quarterly Census of Employment and Wages (QCEW) program and Occupational Employment Statistics (OES) program. The Workforce Alliance also provided information about employee recruiting and retention initiatives being implemented by hotels in Napa.
- BAE utilized an ArcGIS Pro service area "drive time" analysis tool to identify geographies within a 30- and 60-minute driving commute from Downtown Napa to estimate unemployment and housing costs within communities in Napa's commute shed.
- CoStar provided average two-bedroom apartment rental rates, vacancy rates, and inventory information from the fourth quarter of 2017 in selected cities within commuting distance of the City of Napa.
- CoreLogic and DQ News provided median home sale prices in selected cities within commuting distance of the City of Napa.

This analysis is based on the hypothetical full buildout of 2,112 hotel rooms and the distribution of these hotel rooms by property type as shown in Cushman and Wakefield's *Draft*

Napa Valley Lodging Market Study. However, as noted in the Market Study, actual buildout may differ from the current projected buildout, potentially resulting in fewer hotel rooms, more hotel rooms, or different types of hotel rooms than described in the Market Study and in this analysis. To the extent that actual buildout differs from the current projected buildout, the findings provided in this report may overestimate or underestimate total hotel worker demand and associated housing needs.

Hotel Worker Demand

As shown in Table 1, the City of Napa's hotel development pipeline includes a total of 2,112 hotel rooms of various types, which would create demand for an estimated 1,055 additional hotel workers in Napa at full buildout of the pipeline projects. The estimated ratio of workers per hotel room varies by property type, with the highest ratio for luxury hotels and resorts.

Table 1: Estimated Number of Workers by Proposed Hotel Type, City of Napa, 2023

	Employment-to-Room Ratio (a)			Proposed Number	Estimated Number of
Hotel Type	**Low**	**High**	**Avg.**	**of Rooms**	**Employees**
B&Bs/Small Inns	0.20	0.50	0.35	102	36
Limited/Select Service	0.23	0.30	0.27	556	147
Full Service	0.30	0.75	0.53	971	510
Luxury Hotels and Resorts	0.50	1.00	0.75	483	362
Total				**2,112**	**1,055**

Note:
Table applies current average employment-to-room ratios in the City of Napa for each hotel type to the number of rooms proposed for each hotel type to arrive at an employment estimate. Proposed hotel data excludes speculative projects.
(a) Employment ratios provided by Cushman & Wakefield.
Sources: STR, 2017; Cushman & Wakefield, 2018; BAE, 2018.

Hotel Worker Households

Since most households in Napa include more than one worker, the City can expect that new hotel employment will result in demand for fewer than one housing unit per worker. According to the US Census American Community Survey, as of 2016 Napa County had 71,169 workers living in households and 36,430 households with at least one worker, averaging approximately 1.95 workers per household with workers. Therefore, this analysis estimates the number of hotel worker households by dividing the total number of workers by 1.95. As shown in Table 2, full buildout of the 2,112 proposed hotel rooms would result in an estimated 540 net additional households by 2023. The estimated net increase in households is lower in years 2018 through 2022, prior to full buildout.

Table 2: Estimated Number of Worker Households from Proposed Hotels in the City of Napa

Hotel Type	2018	2019	2020	2021	2022	2023
Proposed Number of Rooms						
B&Bs/Small Inns	9	31	67	102	102	102
Limited/Select Service	0	0	98	374	482	556
Full Service	181	282	314	696	971	971
Luxury Hotels and Resorts	0	0	0	0	483	483
Total	**189**	**313**	**479**	**1,172**	**2,038**	**2,112**
Estimated Number of Workers (a)						
B&Bs/Small Inns	3	11	23	36	36	36
Limited/Select Service	0	0	26	99	128	147
Full Service	95	148	165	366	510	510
Luxury Hotels and Resorts	0	0	0	0	362	362
Total	**98**	**159**	**214**	**500**	**1,036**	**1,055**
Estimated Number of Worker Households						
B&Bs/Small Inns	2	5	12	18	18	18
Limited/Select Service	0	0	13	51	65	75
Full Service	49	76	84	187	261	261
Luxury Hotels and Resorts	0	0	0	0	185	185
Total	**50**	**81**	**110**	**256**	**530**	**540**

Assumptions	
Estimated Number of Employees/Room (b)	
B&Bs/Small Inns	0.35
Limited/Select Service	0.27
Full Service	0.53
Luxury Hotels and Resorts	0.75
Workers per household (c)	1.95

Note:
(a) Table applies current average employment-to-room ratios in the City of Napa for each hotel type to the number of rooms proposed for each hotel type to arrive at an employment estimate. Proposed hotel data excludes speculative projects.
(b) Cushman & Wakefield provided a range of ratios of employees per rooms by hotel type. This analysis uses the midpoint of each range.
(c) Workers per household assumption reflects the average number of workers in each household with at least one worker, based on 2016 ACS estimates for Napa County.
Sources: ACS, 2016; Cushman & Wakefield, 2018; BAE, 2018.

Hotel Worker Income

In order to understand the ability of hotel worker households to obtain housing, this analysis evaluates typical hotel worker incomes and hotel worker household incomes. Worker income data provide information on typical wages for individual hotel workers. Household income data provide information on typical household incomes for hotel workers, which includes income earned by any other members of hotel workers' households in addition to each hotel worker's individual income.

Hotel Worker Wage Distribution

According to the BLS May 2016 National Industry-Specific Occupational Employment Report for the Accommodation industry, the weighted average annual income for workers employed in hotels in Napa County was approximately $42,800 in 2017. This is slightly more than half of the median annual income for a three-person household in Napa County ($81,900) and just above the income limit for a very low-income, three-person household in the County ($41,900), based on data from HCD. Table 3 shows the distribution of employees of Napa County hotels by job type and the average annual incomes within each job category in 2017. The annual incomes shown in Table 3 are the figures reported by BLS, which assume full-time employment, and therefore may overstate annual incomes for part-time workers.

Table 3: Incomes of Hotel Employees in Napa County, 2017

Job Category	Percent of Hotel Industry Jobs (a)	Employee Annual Income (b)
Building and Grounds Cleaning and Maintenance	28.2%	$31,237
Food Preparation and Serving Related	25.0%	$32,022
Office and Administrative Support	18.4%	$43,325
Personal Care and Service	7.7%	$31,939
Installation, Maintenance, and Repair	5.1%	$54,278
Management	4.3%	$127,034
Sales and Related	2.9%	$44,151
Protective Service	2.3%	$57,994
Production	2.1%	$43,955
Other (c)	4.1%	$62,781
Total / Weighted Average	**100.0%**	**$42,819**

Notes:
(a) Percentages are from U.S. Bureau of Labor Statistics (BLS) May 2016 National Industry-Specific Occupational Employment Report for the Accommodation industry.
(b) Mean annual wages were from the BLS May 2016 Occupational Employment Statistics (OES) Survey for the Accommodation Industry in Napa County and adjusted for inflation to reflect 2017 wages. The annual incomes reported by BLS are based on full-time employment, and may overstate annual income for part-time workers.
(c) Includes all occupations that do not individually comprise at least 2% of total hotel industry jobs.
Sources: United States Bureau of Labor Statistics, 2016; California Department of Housing and Community Development, 2017; BAE, 2018.

Hotel Worker Household Income Distribution

Individual worker incomes are not necessarily indicative of worker household incomes, largely because households often have more than one employed person and employed people within a given household could earn significantly different individual annual incomes. In addition, while the individual worker incomes shown above are based on full-time employment, many workers are employed on a part-time basis.

BAE estimated the distribution of household income among for Napa hotel workers using a detailed and rich data set published by the U.S. Census known as the Public Use Microdata Sample (PUMS). Derived from a five percent sample of all households per the American Community Survey, and available for defined areas (termed Public Use Microdata Areas or PUMAs) with a population of 100,000 or more, these data allow one to cross tabulate variables such as industry of employment and household income. BAE queried the PUMS dataset to identify the household income distribution for hotel workers that live in the Napa County PUMA and the North Sonoma County PUMA. The distribution is based on the income categories defined by the California Department of Housing and Community Development (HCD), which are defined by a formula based largely on the percentage of the Area Median Income (AMI), adjusted for household size and income levels relative to housing costs.[1]

If the workers in the proposed hotels in Napa are similar to existing hotel workers living in the Napa County and North Sonoma County PUMAs with respect to their household incomes, the income distribution for hotel worker households shown in Table 4 below suggests that almost half of the workers anticipated to be generated by new hotels would be in extremely low-, very low-, or low-income households, while another 24 percent would be in moderate income households. The figures below indicate that full buildout of the projected hotel development may generate an estimated 152 above moderate-income households, 130 moderate-income households, 136 low-income households, 71 very low-income households, and 51 extremely low-income households.

[1] The income distribution for hotel worker households that live in the Napa County and North Sonoma County PUMAs may differ somewhat from the household income distribution for people that work in the City of Napa. However, this analysis assumes that the income distribution for hotel worker households living in these areas is generally consistent with the household income distribution for hotel workers employed in the City of Napa.

Table 4: Household Incomes of Future Workers Employed in Proposed Napa City Hotels, 2017

Income Group	Income as a Percentage of Area Median Income (a)	Estimated Percent of Hotel Workers (b)	Estimated Household Income Distribution for Hotel Worker Households, 2023
Extremely Low	≤ 30% AMI	10%	51
Very Low	> 30 ≤ 50% AMI	13%	71
Low	> 50% ≤ 80% AMI	25%	136
Moderate	> 80% ≤ 120% AMI	24%	130
Above Moderate	> 120% AMI	28%	152
Total		**100%**	**540**

Note:

(a) This analysis uses area median income (AMI) estimates from the California Department of Housing and Community Development. AMI varies by household size. This analysis controls for household size to ensure that sample households are categorized into the appropriate income groups.

(b) Based on a cross tabulation of Public Use Microdata Samples (PUMS) from the 2011-2015 American Community Survey, using data for residents of the Napa County PUMA and North Sonoma County PUMA that work in the accomodations industry. These incomes were compared to household income limits published by the California Department of Housing and Community Development, to determine the percentage of households falling into each income category. The analysis controlled for household size, to address the varying HCD income limits for each household size.

Sources: Census, American Community Survey Public-Use Microdata Sample (PUMS) 2011-2015; CA Dept. of Housing and Community Development, 2015; BAE, 2018.

City of Napa Commute Shed

While some people who work in hotels in the City of Napa will live in Napa, many will live elsewhere due to housing cost or availability, personal preference, proximity to family or a spouse's place of employment, or other factors. BAE conducted a geospatial analysis using the ArcGIS "drive time" analysis tool to define the geographic areas from which commuters can reach the City of Napa by car within 30 minutes and 60 minutes. As shown in Figure 1, the 30-minute drive time includes the Cities of American Canyon, Napa, St. Helena, and Yountville in Napa County; Sonoma in Sonoma County; Vallejo in Solano County; and portions of unincorporated Napa County, Sonoma County, and Solano County. In addition to these areas, the 60-minute drive time includes additional cities and unincorporated areas in Alameda, Contra Costa, Marin, Napa, Solano, Sonoma, and Yolo Counties, as shown in Figure 2. However, drive times can vary substantially based on traffic conditions, and commutes from some of these areas may take longer than indicated by the figures below during heavy traffic periods.

Figure 1: 30-Minute Commute Shed from Downtown Napa

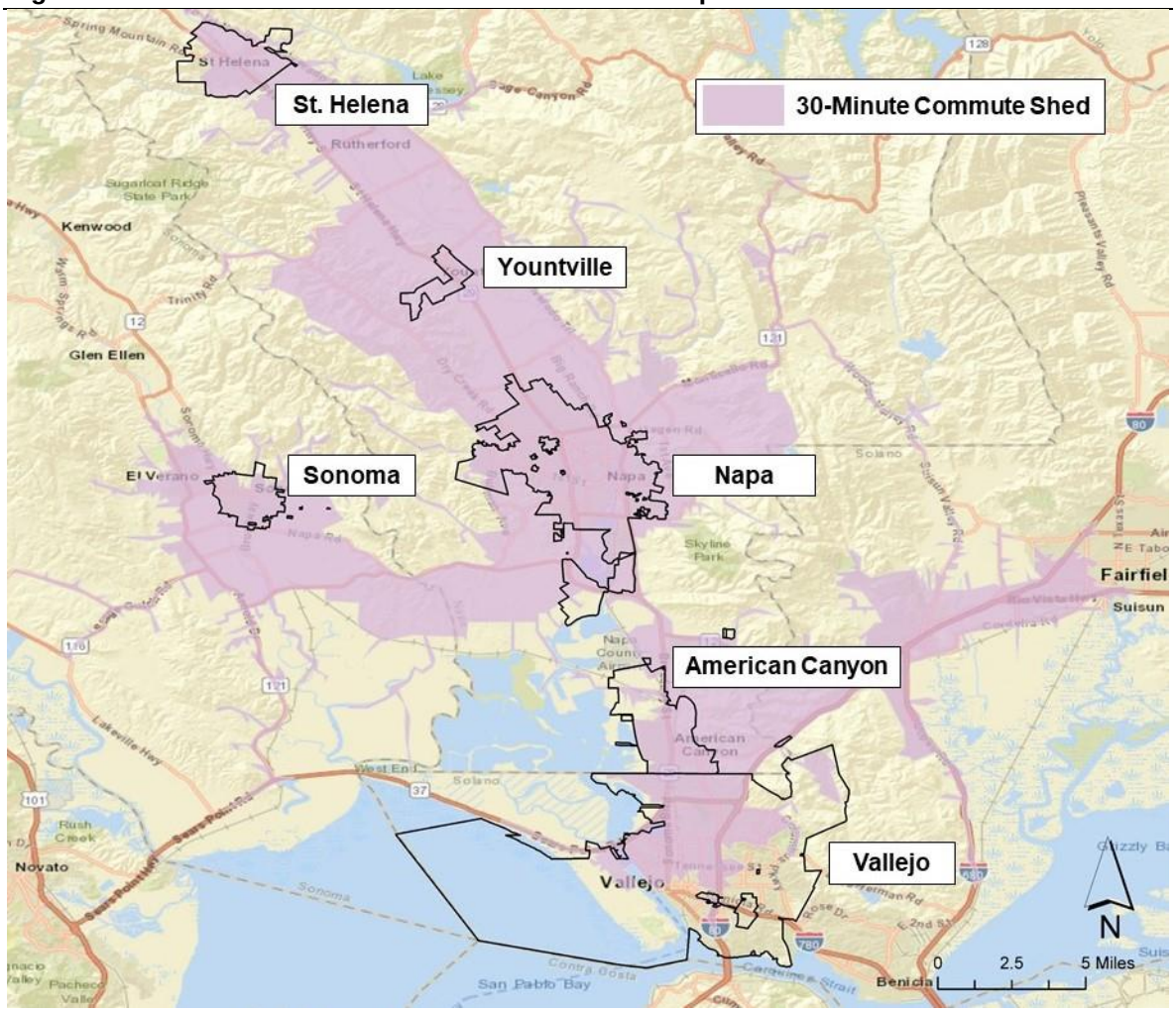


Figure 2: 60 Minute Commute Shed from Downtown Napa

Labor Force Participation within the Commute Shed

The unemployment rate is relatively low among residents living within the 30- and 60-minute commutes sheds from Downtown Napa, suggesting that the potential to pull labor for new hotels from the existing unemployed labor force in the area is relatively limited. As shown in Table 5, the unemployment rate is 5.5 percent (representing 6,994 unemployed people) within the 30-minute commute shed and 5.1 percent (representing 54,370 people) within the 60-minute commute shed.

The current unemployment rates in the 30- and 60-minute commute sheds are comparable to the current national natural rate of unemployment,[2] which was estimated to be 4.74 percent[3] in the fourth quarter of 2017. Natural unemployment is the default unemployment level caused by mismatches in the skills of individuals looking for jobs and the skills demanded by employers aiming to fill open positions (known as structural unemployment) as well as temporarily unemployed people who are new to the job market or are searching for a better job (known as frictional unemployment). If the actual rate of unemployment closely mirrors the

[2] Also known as the Non-Accelerating Inflation Rate of Unemployment, or NAIRU.
[3] U.S. Congressional Budget Office via Federal Reserve Bank of St. Louis, August 2017. https://fred.stlouisfed.org/series/NROUST

natural rate of unemployment, it is a sign that the skills of many of the currently unemployed people do not match the open positions.

Table 5: Unemployed Residents Within a 30- and 60-Minute Commute of Napa, 2017

	Civilian Labor Force (a)	Unemployment Rate	Unemployed Residents (b)
0-30 Minute Commute Shed (c)	127,521	5.5%	6,994
0-60 Minute Commute Shed (c)	1,060,974	5.1%	54,370

Notes:
(a) Civilian Population Age 16+ in Labor Force
(b) Unemployed Population Age 16+
(c) BAE utilized an ArcGIS service area "drive time" analysis tool to identify the geographies within a 30- and 60-minute driving commute from Downtown Napa.
Sources: ArcGIS Pro, 2018; Esri, 2017; BAE, 2018.

The figures in Table 5 indicate that unemployed residents within Napa's 60-minute commute shed are not likely to supply enough labor for the planned and proposed hotels in Napa. Within the 30-minute commute shed, the estimated 1,055 workers needed to fill jobs at the new planned and proposed hotels is equivalent to 15 percent of the current unemployed population. While the unemployment rate and number of unemployed persons may change during the buildout period for the proposed hotels, and the actual number of workers needed could vary based on actual hotel buildout, these figures nonetheless suggest that the 30-minute commute shed does not have enough workers with the skills and the willingness to work in the hotel industry given the low unemployment rate in the area. The low unemployment rate suggests that most unemployed individuals within a 30-minute distance of Napa are unemployed because of a mismatch between their skills or professional objectives and the major industries of employment in the area, including hotels, leaving a minimal number of unemployed residents to support a net increase in hotel jobs. To the extent that the 30-minute commute shed does include workers with the skills and willingness to work in the hotel industry, hotels in the City of Napa will be competing with other nearby hotels, and potentially employers in other industries, to attract these workers.

Hotel operators may also face significant barriers in attracting workers from the 30- to 60-minute commute shed, despite the larger pool of unemployed residents in this wider area. Within the 60-minute commute shed of Napa, it is possible that there are enough unemployed residents with the skills and willingness to work in the hotel industry to fill the new hotel jobs. However, considering the relatively low salaries of many hotel workers, many people living 45, 50, or 60 minutes away from Napa may realize little to no financial gain from accepting hotel jobs in Napa. Long commutes cause wear-and-tear on vehicles, high fuel expenses, and time away from family, which can translate into higher childcare expenses. Residents that commute to Napa by bus likely face longer commute times than those that commute from the same distance by car, and a low share of people that work in Napa commute by public transportation (1.8 percent according to 2016 ACS data). The economic tradeoffs that a low-income worker within the larger commute shed would have to make in order to work in Napa

may simply be too high. The new housing in the development pipeline for the City of Napa and nearby communities (discussed in the following section) may be essential to provide unemployed workers in the 60-minue commute shed with opportunities to move closer to new hotel jobs in Napa over the course of the buildout period for the hotels and for hotel operators to attract a labor force that lives within a reasonable commute distance.

Housing Market Conditions within the Commute Shed

Hotel operators in Napa have expressed concern that the region's high housing costs may limit their ability to attract workers in the future, particularly for lower-paying jobs. While housing markets in the Napa area and the greater Bay Area region are characterized by high costs and limited availability, numerous planned residential projects in the City of Napa could significantly improve hotel workers' ability to secure affordable housing near Napa hotels. The following section discusses residential rental rates and home sale prices within commuting distance of Napa to assess the affordability of the regional housing stock for hotel worker households. Most of the analysis presented in this section models housing affordability based on California Department of Housing and Community Development income limits for a three-person household, reflecting the average household size in Napa County of 2.78, according to ACS estimates.[4]

Planned and Proposed Residential Development

The City of Napa anticipates that future hotel development in Napa will occur concurrently with the development of residential units in the City as well as in surrounding communities, and has significantly more residential units in the development pipeline than would be necessary to accommodate the estimated 540 worker households that the proposed hotels would generate. As shown in Table 6, there are 2,265 residential units in the development pipeline, including 1,773 market-rate units and 492 units at various levels of affordability. Of the 492 affordable units, 212 are in the current pipeline, with the remaining units in the City's longer-term pipeline.

[4] The average household size of 2.78 is different from the average number of workers per household cited in an different section of this report (1.95) because the average household size includes members of each household that are not workers.

Table 6: City of Napa Residential Development Pipeline, March 2018

Affordability Level	Number of Units
Affordable Units	492
Current Pipeline	*212*
Longer-Term Pipeline	*280*
Market-Rate Units	1,773
Current Pipeline	*1,018*
Longer-Term Pipeline	*755*
Total	**2,265**

Notes:
Information provided by the City of Napa.
Source: City of Napa, 2018; BAE, 2018.

The figures in Table 6 suggest that future residential development in Napa could provide enough housing units to absorb the worker housing demand that the proposed hotels will create. The number of residential units in the pipeline far exceeds the estimated 540 households associated with the workforce for the new hotels (see Table 2), including the projected affordable housing need. Once built, the units in the pipeline would include some units with restricted rents or sale prices serving households with moderate or lower incomes as well as market-rate units that will likely be priced within the affordability range for moderate and above-moderate income households. New market-rate units may also indirectly increase the availability of lower-cost housing by providing housing options for moderate- and above-moderate income households to move from an existing and potentially more affordable unit to a new higher-cost unit, leaving the lower-cost unit available to a new household.

In addition to the units shown in Table 6, developers could propose additional residential projects during the buildout period for the proposed hotels, further increasing the supply of new residential units. Moreover, to the extent that hotels are able to employ existing residents or some of the proposed hotels are ultimately not be constructed, the number of net new units needed to house the proposed hotels' workforce could be somewhat lower than 540 units. Consequently, future residential construction in Napa may keep pace with or exceed housing demand from the projected increase in hotel workers.

However, continued efforts to produce affordable and market-rate housing in Napa and surrounding communities may be necessary to ensure that housing growth matches employment growth over time. Some projects that are currently in the development pipeline may never be built, though these projects could be replaced with different projects in the pipeline. Furthermore, at least some residential units in the pipeline are likely to house existing residents that are currently in need of affordable housing, leaving fewer residential units for new hotel workers. Other units will likely house new residents that do not work in Napa's hotels, including people that work outside of Napa. The wide range of potential

outcomes associated with both the residential and hotel pipeline projects results in a need for ongoing efforts to ensure construction of residential units at a range of affordability levels.

In part, Napa's ability to keep pace with housing demand will depend on whether housing construction in surrounding communities will match the need created by employment growth in those communities. The Napa County Cities of American Canyon, Calistoga, and St. Helena have a combined total of at least 172 affordable units in the development pipeline, along with market-rate units, suggesting that these cities are planning for future residential growth that will increase the region's overall housing supply.

Rental Housing Affordability

Table 7 shows the maximum amount that a three-person household within each AMI level can afford to pay for rental housing (including rent and utilities) without being considered cost-burdened. According to U.S. Department of Housing and Urban Development (HUD) standards, households paying more than 30 percent of their gross incomes for housing costs are considered "cost-burdened." The table demonstrates that an extremely low-income, three-person household can afford monthly rental costs of up to $630 per month, while a moderate-income, three-person household can afford monthly rental costs of up to $2,458 per month.

Table 7: Maximum Monthly Rental Housing Costs for a Household of Three in Napa County, 2017

Household Income Group (a)	AMI Level	Max. Annual Income (a)	Maximum Monthly Rental Housing Costs (b)
Extremely Low Income	≤ 30%	$25,200	$630
Very Low Income	> 30 ≤ 50%	$41,900	$1,048
Low Income	> 50% ≤ 80%	$67,050	$1,676
Moderate Income	> 80% ≤ 100%	$81,900	$2,048
Moderate Income	> 100% ≤ 120%	$98,300	$2,458
Above Moderate Income	> 120%	N/A	N/A

Notes:
(a) Based on 2017 HCD Income limits for a family of three.
(b) The maximum amount that a household can spend on monthly housing costs without being considered "cost burdened" is thirty percent of gross monthly income, as per HUD guidelines.
Sources: California Department of Housing and Community Development, 2017; BAE 20:

Table 8 shows the average asking rents and vacancy rates from CoStar for a two-bedroom apartment in all cities within a 30-minute commuting distance of Napa and selected cities within a 60-minute commuting distance of Napa. Within a 30-minute commute, the average market-rate two-bedroom rent ranges from $1,337 in Saint Helena to $1,940 in Napa. Within a 60-minute commute, the average market-rate two-bedroom rent ranges from $1,046 in Winters to $2,248 in Hercules. Vacancy rates are relatively low across all cities within the commute shed, ranging from two percent to five percent. The low rental vacancy rates in these cities suggests a shortage of available units, even for households that can afford

market-rate rents. This housing unit shortage is indicative of trends across the Bay Area and California, and is not unique to the Napa commute shed. Nonetheless, it does illustrate the potential difficulty of hotel workers in obtaining appropriate housing.

Table 8: Average Asking Rents and Vacancy Rates for Market-Rate Two-Bedroom Units in Selected Cities Within a 30- and 60-Minute Commute of the City of Napa, 2017

City	Avg. Asking Rent	Total 2BR Units	Vacancy Rate	Vacant 2BR Units
Within 30-Minute Commute (a)				
Napa	$1,940	1,765	3.2%	56
American Canyon	$1,611	208	2.6%	5
Sonoma	$1,652	365	4.1%	15
St. Helena	$1,337	50	2.8%	1
Vallejo	$1,603	2,023	4.2%	85
Yountville	$1,370	16	3.1%	0
Within 60-Minute Commute (a)				
Benicia	$1,728	466	2.9%	14
Fairfield	$1,602	2,898	5.0%	145
Hercules	$2,248	144	4.3%	6
Martinez	$1,926	968	4.0%	39
Novato	$2,099	1,370	3.1%	42
Petaluma	$2,218	1,548	2.0%	31
Pinole	$2,247	334	5.2%	17
Rohnert Park	$1,944	1,694	3.8%	64
Santa Rosa	$1,873	5,377	3.3%	177
Vacaville	$1,672	3,175	4.5%	143
Winters	$1,046	45	2.0%	1

Note:
(a) BAE utilized an ArcGIS service area "drive time" analysis tool to identify cities within a 30- and 60-minute driving commute from Downtown Napa. All cities within a 30-minute drive time are shown in the table, as well as selected cities in the 60-minute commute shed. Unincorporated areas within these commute sheds were omitted from this analysis due to unavailability of data.
Sources: ArcGIS Pro; CoStar; BAE, 2018.

Market-rate rents in most communities within Napa's commute shed exceed the rent that household with incomes equal to 80 percent of AMI or less, including many hotel worker households, can afford. Table 9 shows the difference between the average cost of a two-bedroom apartment in each of these cities and the maximum monthly rental housing budget for a household of three at each AMI level. In all cities analyzed, the average two-bedroom apartment is unaffordable to a three-person household earning less than 50 percent of AMI. For low-income households earning between 50 and 80 percent of AMI, the average two-bedroom apartment is affordable only in Sonoma, Yountville, and Winters. However, as Table 8 shows, these cities have few units available: there are only fifteen vacant two-bedroom units in Sonoma, zero in Yountville, and one in Winters.

Moderate income households are in a better position to find affordable rental housing than are lower-income households, but may still face a shortage of supply due to low vacancy rates. A household of three earning between 80 and 100 percent of AMI can afford the average two-bedroom apartment in all six of the cities analyzed within the 30-minute commute shed, and in six of the eleven cities within the 60-minute commute shed. A household of three earning between 100 and 120 percent of AMI can afford the average two-bedroom apartment in all seventeen of the cities analyzed. However, due to the low vacancy rates in these communities, many of these households may nonetheless face difficulty in securing suitable rental housing.

Table 9: Affordability of Market-Rate Rental Housing for a Household of Three Within a 30- and 60-Minute Commute of the City of Napa, 2017

			Difference Between Affordable Rent and Avg. 2BR Rent by AMI Level (a)				
	Avg. 2 BR Rent	Utility Costs (b)	≤ 30% AMI	> 30 ≤ 50% AMI	> 50% ≤ 80% AMI	> 80% ≤100% AMI	> 100% ≤120% AMI
Within 30-Minute Commute *(c)*							
Napa	$1,940	$94	($1,404)	($987)	($358)	$14	$424
American Canyon	$1,611	$94	($1,075)	($658)	($29)	$343	$753
Sonoma	$1,337	$110	($817)	($400)	$229	$601	$1,011
St. Helena	$1,652	$94	($1,116)	($699)	($70)	$302	$712
Vallejo	$1,603	$126	($1,099)	($682)	($53)	$319	$729
Yountville	$1,370	$94	($834)	($417)	$212	$584	$994
Within 60-Minute Commute *(c)*							
Benicia	$1,728	$126	($1,224)	($807)	($178)	$194	$604
Fairfield	$1,602	$112	($1,084)	($667)	($38)	$334	$744
Hercules	$2,248	$113	($1,731)	($1,314)	($685)	($314)	$97
Martinez	$1,926	$113	($1,409)	($992)	($363)	$9	$419
Novato	$2,099	$111	($1,580)	($1,163)	($534)	($163)	$248
Petaluma	$2,218	$110	($1,698)	($1,281)	($652)	($281)	$130
Pinole	$2,247	$113	($1,730)	($1,313)	($684)	($313)	$98
Rohnert Park	$1,944	$110	($1,424)	($1,007)	($378)	($7)	$404
Santa Rosa	$1,873	$110	($1,353)	($936)	($307)	$65	$475
Vacaville	$1,672	$104	($1,146)	($729)	($100)	$272	$682
Winters	$1,046	$151	($567)	($150)	$479	$851	$1,261

Notes:

(a) Household Incomes per 2017 HCD Income Limits. Per HUD guidelines; a household that spends more than 30% of its income on rental housing costs is considered housing cost-burdened.

(b) Based on monthly utility allowances outlined by the local housing authority of each jurisdiction.

(c) BAE utilized an ArcGIS service area "drive time" analysis tool to identify cities within a 30- and 60-minute driving commute from Downtown Napa. All cities within a 30-minute drive time are shown in the table, as well as selected cities in the 60-minute commute shed. Unincorporated areas within these commute sheds were omitted from this analysis due to unavailability of data.

Sources: California Department of Housing and Community Development, 2017; ArcGIS Pro, 2018; CoStar, 2018; Housing Authority of the City of Napa, 2017; City of Vallejo Housing & Community Development Division, 2018; Solano County Housing Authority, 2018; City of Vacaville Housing Authority, 2017; Sonoma County Community Development Division, 2017; City of Fairfield Housing Authority, 2017; Housing Authority of the County of Contra Costa, 2017; Housing Authority of the County of Marin, 2017; Yolo County Housing Authority, 2017; BAE, 2018.

Homeownership Affordability

Table 10 illustrates the maximum amount that a three-person household within each AMI level can afford to pay for a home, including financing costs, insurance, and property taxes. The following homeownership affordability analysis assumes that the maximum amount that a household can afford to spend on homeownership is 35 percent of monthly gross income.[5]

Table 10: Affordable For-Sale Single Family Home Prices for a Three-Person Household in Napa County, 2017

			Monthly Payments							
AMI Level	Max. Annual Income	Amount Avail. For Housing	Principal & Interest	Prop. Insurance	Prop. Taxes	Monthly Mortgage Insurance	Total Monthly Payment	Upfront Mortgage Insurance	Down-Payment	Max. Affordable Home Price
≤ 30% AMI	$25,200	$735	$549	$35	$99	$52	$735	$2,003	$4,152	**$118,626**
> 30 ≤ 50% AMI	$41,900	$1,222	$912	$58	$164	$87	$1,222	$3,331	$6,903	**$197,226**
> 50% ≤ 80% AMI	$67,050	$1,956	$1,460	$94	$263	$140	$1,956	$5,331	$11,049	**$315,691**
> 80% ≤ 100% AMI	$81,900	$2,389	$1,783	$114	$321	$171	$2,389	$6,511	$13,495	**$385,576**
> 100% ≤ 120% AMI	$98,300	$2,867	$2,140	$137	$386	$205	$2,867	$7,814	$16,195	**$462,724**

Ownership Cost Assumptions		
% of Income for Housing Costs	35%	of gross annual income
Mortgage Terms:		
Down payment (b)	3.50%	of home value
Annual interest rate (c)	4.03%	fixed
Loan term	30	years
Upfront mortgage insurance (d)	1.75%	of mortgage
Annual mortgage insurance (d)	0.55%	of mortgage
Annual homeowners insurance rate (e)	0.36%	of home value
Annual property tax rate	1.00%	of home value

Notes:
(a) Income limits per 2017 HCD Income Limits.
(b) Based on the assumption that the mortgage is FHA-backed
(c) Based on average 30-year fixed interest rates as reported by Freddie Mac on February 23, 2018
(d) Monthly mortgage insurance premium (MIP) rate as reported by the U.S. Department of Housing and Urban Development in January 2017.
(e) Based on an average of quoted insurance premiums for homes from the Homeowners Premium Survey, published by the California Department of Insurance.
Sources: California Department of Housing and Community Development, 2017; Freddie Mac, 2018; U.S. Department of Housing and Urban Development, 2017; California Department of Insurance, Homeowners Premium Survey, 2017; BAE, 2018.

Table 11 shows the median home sale prices in December 2016 and December 2017 in selected cities within a 30- and 60-minute commute of Napa. Within the 30-minute commute shed, prices in December 2017 ranged from $377,500 in Vallejo to $925,000 in St. Helena; within a 30- to 60-minute commute they ranged from $400,000 in Winters to $777,500 in Novato.

[5] Due to the equity returns that homeownership can generate, this analysis sets the affordability threshold for homeownership slightly higher than for rental housing.

Table 11: Median Home Sale Prices in Selected Cities Within a 30- and 60-Minute Commute of the City of Napa, Dec. 2016 and Dec. 2017

City	Homes Sold	Median Sale Price Dec. 2016	Median Sale Price Dec. 2017	Y-O-Y Percent Change
Within 30-Minute Commute (a)				
Napa	94	$528,250	$650,050	23.1%
American Canyon	19	$500,000	$477,500	-4.5%
Sonoma	31	$775,000	$692,500	-10.6%
St. Helena	10	$875,000	$925,000	5.7%
Vallejo	160	$360,000	$377,500	4.9%
Yountville	4	$1,277,500	$796,000	-37.7%
Within 60-Minute Commute (a)				
Benicia	37	$580,000	$530,000	-8.6%
Fairfield	144	$415,000	$425,000	2.4%
Hercules	34	$452,000	$602,500	33.3%
Martinez	66	$452,500	$568,500	25.6%
Novato	54	$725,000	$777,500	7.2%
Petaluma	42	$636,000	$665,000	4.6%
Pinole	16	$515,000	$522,500	1.5%
Rohnert Park	44	$515,000	$525,000	1.9%
Santa Rosa	188	$474,000	$582,909	23.0%
Vacaville	163	$405,000	$439,500	8.5%
Winters	5	$329,000	$400,000	21.6%

Note:
(a) BAE utilized an ArcGIS service area "drive time" analysis tool to identify cities within a 30- and 60-minute driving commute from Downtown Napa. All cities within a 30-minute drive time are shown in the table, as well as selected cities in the 60-minute commute shed. Unincorporated areas within these commute sheds were omitted from this analysis due to unavailability of data.
Sources: ArcGIS Pro; CoreLogic via DQ News, 2017; BAE, 2018.

Homeownership costs in most communities within Napa's commute shed tend to be significantly higher than the affordable home sale price for the large share of hotel workers with incomes equal to 120 percent of AMI or below. Table 12 shows the difference between the December 2017 median home sale price in cities within the commute shed and the maximum affordable home sale price for a household of three at each AMI level. In all cities analyzed, the median home sale price is unaffordable to a three-person household earning less than 80 percent of AMI. A household of three earning between 80 and 100 percent of AMI can afford the median home only in Vallejo, while a household of three earning between 100 and 120 percent of AMI can afford the median home in four out of the seventeen cities analyzed: Vallejo, Fairfield, Vacaville, and Winters.

Table 12: Affordability of Homes Sold Within a 30- and 60-Minute Commute of the City of Napa for a Household of Three, December 2017

		Difference Between Affordable Sale Price & Median Sale Price by AMI Level (a)				
City	Median Home Sale Price, Dec. 2017	≤ 30% AMI	> 30 ≤ 50% AMI	> 50% ≤ 80% AMI	> 80% ≤ 100% AMI	> 100% ≤ 120% AMI
Within 30-Minute Commute (b)						
Napa	$650,050	($531,424)	($452,824)	($334,359)	($264,474)	($187,326)
American Canyon	$477,500	($358,874)	($280,274)	($161,809)	($91,924)	($14,776)
St. Helena	$692,500	($573,874)	($495,274)	($376,809)	($306,924)	($229,776)
Sonoma	$925,000	($806,374)	($727,774)	($609,309)	($539,424)	($462,276)
Vallejo	$377,500	($258,874)	($180,274)	($61,809)	$8,076	$85,224
Yountville	$796,000	($677,374)	($598,774)	($480,309)	($410,424)	($333,276)
Within 60-Minute Commute (b)						
Benicia	$530,000	($411,374)	($332,774)	($214,309)	($144,424)	($67,276)
Fairfield	$425,000	($306,374)	($227,774)	($109,309)	($39,424)	$37,724
Hercules	$602,500	($483,874)	($405,274)	($286,809)	($216,924)	($139,776)
Martinez	$568,500	($449,874)	($371,274)	($252,809)	($182,924)	($105,776)
Novato	$777,500	($658,874)	($580,274)	($461,809)	($391,924)	($314,776)
Petaluma	$665,000	($546,374)	($467,774)	($349,309)	($279,424)	($202,276)
Pinole	$522,500	($403,874)	($325,274)	($206,809)	($136,924)	($59,776)
Rohnert Park	$525,000	($406,374)	($327,774)	($209,309)	($139,424)	($62,276)
Santa Rosa	$582,909	($464,283)	($385,683)	($267,218)	($197,333)	($120,185)
Vacaville	$439,500	($320,874)	($242,274)	($123,809)	($53,924)	$23,224
Winters	$400,000	($281,374)	($202,774)	($84,309)	($14,424)	$62,724

Notes:
(a) Per 2017 HCD Income Limits. "Affordable sale price" is defined here as a price that would enable the owner household to spend 35% or less of gross monthly income on housing costs.
(b) BAE utilized an ArcGIS service area "drive time" analysis tool to identify cities within a 30- and 60-minute driving commute from Downtown Napa. All cities within a 30-minute drive time are shown in the table, as well as selected cities in the 60-minute commute shed. Unincorporated areas within these commute sheds were omitted from this analysis due to unavailability of data.
Sources: CoreLogic via DQ News, 2017; BAE, 2018.

Initiatives in Place to Attract and Retain Hotel Workers

In addition to the new residential development in Napa's pipeline, hotels themselves, and through workforce development groups, are investing in programs aimed at bolstering the local hotel labor force over the long term. These programs would alleviate some of the new housing demand by training existing residents to work in local hotels. Conversations with the Workforce Alliance of the North Bay revealed that three Napa hotels – including the Meritage Resort and Spa, which plans to complete a 145-room expansion project in Summer 2018 – have partnered with the Napa Valley Unified School District and the Workforce Alliance on a program aimed at increasing interest among high school students in careers in the hospitality industry. The program provides students with training and internship opportunities that can become full-time job opportunities upon graduation. The Workforce Alliance of the North Bay

is also in conversations with Napa Valley College about adding a hospitality-focused customer service class to its curriculum.

Potential Outcomes from Reduced Buildout

The analysis presented in this memorandum is based on full buildout of the 2,112 hotel rooms in the development pipeline identified in the 2018 *Draft Lodging Market Study* prepared by Cushman & Wakefield, and therefore could overstate future increases in hotel worker employment and households if this hotel pipeline is not fully built out by 2023. The City of Napa estimates that actual buildout by 2023 could total as few as 1,291 to 1,498 rooms, or approximately 60 to 70 percent of the possible 2,112-room buildout.

If actual buildout by 2023 is equal to approximately 60 to 70 percent of the projected 2,112-room buildout analyzed in this memo, the new hotels could generate a need for an estimated 633 to 739 workers, assuming that the mix of new hotel properties mirrors the mix of property types in the full buildout scenario provided by Cushman & Wakefield. The housing need associated with these workers would total approximately 324 to 378 units, and an estimated 155 to 181 of these households would be extremely low-, very low-, or low-income households. To the extent that the mix of property types among hotels constructed by 2023 differs from the mix in the full buildout scenario, the number of workers and worker households could differ from these figures. For instance, if luxury rooms constitute a smaller share of future hotel construction in Napa than in the full buildout scenario, the employment associated with new hotel construction could total fewer than 633 employees.

Findings

The data and analysis presented in this memorandum support the following findings:

The anticipated development of new lodging in Napa will generate a need for new workers and new worker housing. Napa's currently proposed hotel projects will generate demand for an estimated 1,055 additional hotel workers between 2018 and 2023, or over the course of eventual build-out. The estimated housing need for these workers totals 540 units. During this period, the estimated increase in individual years ranges from 20 additional workers with a need for 10 housing units in 2023 to 535 additional workers with a need for 274 housing units in 2022. If actual buildout by 2023 results in construction of only 60 to 70 percent of the 2,112-unit pipeline, as projected by City staff, the new hotels will generate demand for an estimated 633 to 739 workers, with a need for approximately 324 to 378 housing units.

Napa hotels will need to draw at least a portion of the needed new workers from new members of the labor force and workers moving from outside of the area, generating demand for housing units. The low unemployment rate in Napa's commute shed suggests that Napa hotels will not be able to fill the majority of new jobs by employing existing unemployed residents. Within Napa's 30-minute commute shed, there are relatively few unemployed residents, and therefore hotels are unlikely to find a significant number of unemployed

residents that have the right mix of skills and professional goals to fill the majority of the new hotel jobs. Although communities within the 30- to 60-minute commute shed may have enough unemployed residents that are well-suited for hotel jobs to meet the labor needs of new hotels, many potential workers in these communities may find that the cost of the long commute is too high given the relatively low wages for hotel workers.

While existing unemployed residents and residents that are shifting between jobs can be expected to fill a portion of new hotel jobs, Napa hotels will also need to draw labor from existing residents who are joining the labor force and workers that are currently living outside of the area. This will generate demand for new housing units, as some existing residents entering the workforce will want or need to form new households (for example, a recent high school graduate moving out of their parents' home) and as workers that currently live elsewhere relocate when taking jobs in the area.

The City of Napa has a sizable residential development pipeline, which may be essential to hotel operators' ability to attract and retain workers for new hotel jobs over time. In the absence of new residential construction, high housing costs and low rental vacancies in the Napa area could impact hotel worker attraction and retention in Napa. Current average market-rate rates and median home sale prices indicate that low-income households in the region face immense challenges in finding housing that is proportionate to their incomes. While moderate-income households are typically more able to afford rental housing, a shortage of available supply severely limits these households' ability to find suitable housing and home sale prices tend to be significantly higher than moderate-income households can afford. Because most hotel worker households have low- to moderate-incomes, hotel operators may find that the development of new housing at a range of income levels and other strategies to provide workforce housing are critical to long-term operations.

The City of Napa is making substantial progress toward increasing the City's housing supply at a range of income levels, thereby mitigating the challenges that hotel workers would otherwise face in the current housing market. The City of Napa has 1,529 housing units in the development pipeline, almost three times the number of units that would be needed to absorb the estimated number of worker households associated with the development of the proposed hotels. Moreover, the development pipeline includes 492 affordable residential units, almost twice the estimated number of extremely low-, very low-, and low-income worker households that development of the full pipeline of proposed hotels would generate and significantly more than the number of units that would be needed if fewer hotel rooms are constructed. As residential units are constructed concurrent with the development of new hotels in the City over time, these units can help to address housing availability and affordability challenges that might otherwise arise, as well as address existing housing shortfalls.

While high housing costs and housing shortages are not unique to the hotel industry or the City of Napa, Napa does face some distinctive challenges in terms of housing affordability.

Throughout the Bay Area, high housing costs continue to push low-income households further away from employment centers, increase vehicle congestion, and create hiring difficulties across industries. In Napa County, many of the key employment industries – including the hotel, restaurant, and agricultural sectors – rely on low-cost labor, and therefore have a particular need for housing to serve extremely low-, very low-, and low-income households in order to support the workforce. The prevalence of industries that rely on low-cost labor results in intense competition for affordable units. In addition, hotel jobs and jobs in other industries that offer relatively low wages may face additional challenges in recruiting workers that would need to commute long distances, enhancing the importance of locating affordable housing near employment locations.

Moreover, the 2014 Napa earthquake and major fires in Napa and Sonoma Counties in 2017 severely impacted the housing stock that serves Napa's workforce. To the extent that property owners rebuild rental housing that was damaged in these natural disasters, new units will likely consist of higher-end homes that will be unaffordable to many lower-income households. These natural disasters could therefore further exacerbate the housing affordability and availability challenges faced by Napa's hotel workers, creating a need for continued efforts to ensure future production of affordable housing.

The City's significant residential pipeline, which is anticipated to result in a considerable number of new housing units at a range of affordability levels, concurrent with the development of new hotels, will be critical to addressing these challenges moving forward.

Partnerships between major employers, local government, and affordable housing developers could be key to continuing to address the shortage of workforce housing. Employers located in tight housing markets are increasingly recognizing the imperative to proactively support or provide housing opportunities for their employees. Major employers such as Google, Facebook, and others have responded by providing donations to support the development of affordable housing, investing in market-rate housing, sponsoring development applications to secure approvals for market-rate and affordable housing, and developing corporate housing, among other strategies. The growing focus on expanding housing resources by major firms underscores its utility as a "double bottom line" strategy. In addition to helping employees secure stable housing, an investment in employer-assisted housing resources also serves the employer by improving employee recruitment and retention, lowering turnover costs, and strengthening community relations.

Appendix B
Initial Study

COUNTY OF NAPA
PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT
1195 THIRD STREET, SUITE 210
NAPA, CA 94559
(707) 253-4417

Initial Study Checklist

1. **Project Title:** Inn at the Abbey, Use Permit Major Modification Application No. P19-00038-MOD
2. **County Contact Person, Phone Number and Email:** Trevor Hawkes, Planner III, (707) 253-4388, Trevor.Hawkes@countyofnapa.org
3. **Project Location and Assessor's Parcel No. (APN):** 3018/3020 N. St. Helena Highway; 3010 N. St. Helena Highway; 3022 N. St. Helena Highway; 1189 Lodi Lane (also known as 3000 State Route [SR] 29); and 1157, 1160, 1165, 1179, and 1191 Lodi Lane; APNs 022-130-027, 022-130-028, 022-130-023, 022-130-024, 022-220-028, and 022-220-029
4. **Project Sponsor's Name and Address:** Jackson Family Investments III, LLC, Geoff Scott, 421 Aviation Boulevard, Santa Rosa, CA 95403
5. **Property Owner:** Jackson Family Investments III, LLC
6. **General Plan Designation:** Agriculture, Watershed & Open Space (AWOS)
7. **Zoning:** Commercial Limited (CL) and Agricultural Watershed (AW)
8. **Background/Project History:** The property that is the subject of this application is a 15-acre site composed of six parcels located at Lodi Lane along SR 29, approximately one-half mile north of the city limits of St. Helena, in unincorporated Napa County (Figure 1). The project site includes land zoned for CL and AW uses.
   The project site is currently used as the Freemark Abbey Winery complex and has been used for a blend of agricultural and commercial uses since the 1960s. There are also six residences on the site. For more than 50 years, the site has been entitled for multiple winery, retail, restaurant, and motel uses through several use permits and modifications. Current operations include the Freemark Abbey Winery production and wine tasting facilities, retail uses, a restaurant, a café, a motel, and residential units (Figure 2).
9. **Description of Project:** The applicant has submitted a use permit major modification request (P19-00038-MOD) to demolish three structures (a restaurant, a commercial building, and a motel) and redevelop the site with a 79-room hotel and associated guest amenities, including a spa with treatment rooms, a fitness studio, a rooftop lounge and back-of-house uses totaling approximately 78,400 square feet (sq. ft.) (Figure 3). Other site features would include a parking garage, a swimming pool, a plunge pool, and an outdoor lawn area. The existing residences would be used for on-site employee housing. Major modification of a use permit by Napa County is a discretionary action subject to the California Environmental Quality Act (CEQA). The applicant is also seeking approval of a development agreement with Napa County.
   The 15-acre project site includes six parcels owned by the project applicant. Three of these parcels are zoned for AW, two are zoned CL, and one parcel includes both AW and CL zoning. The four parcels located north of Lodi Lane are referred to as the "North Parcel," and the two parcels south of Lodi Lane are known as the "South Parcel." The North Parcel totals 1.84 acres of land zoned CL and 8.43 acres of land zoned AW. The South Parcel includes 1.70 acres zoned CL and 4.83 acres zoned AW.

Source: Adapted by Ascent Environmental in 2020

Figure 1 Project Location

Source: Adapted by Ascent Environmental in 2020.

Figure 2 Existing Project Site

Source: Adapted by Ascent Environmental in 2020.

Figure 3 Proposed Site Plan

The project would involve demolition of three buildings totaling 10,048 sq. ft. These buildings are currently used as a restaurant, retail wine shop, art gallery, and five-room motel. Demolition activities would also include removal of asphalt concrete driveways and parking areas, as well as concrete slabs.

The proposed hotel would include 79 rooms that would be split between the North Parcel (50 rooms) and the South Parcel (29 rooms). The existing Stone Building on the North Parcel is currently used for winery, retail, retail wine, and restaurant uses. Under the proposed project, there would be no physical change to the building's structure, but the interior may require minor renovations to serve as the hotel's main lobby, which may include a retail component, meeting space, and/or a bar/lounge component. Current barrel storage, wine lab, and bottle storage spaces in this building would be removed, and this space would be used for hotel conference space and back-of-house needs. The Stone Building has nearly 13,000 sq. ft. of floor space split between the basement and ground levels.

The project involves constructing a new North Hotel Building on the North Parcel in approximately the same location as the existing restaurant building, which would be demolished as part of this project. The North Hotel Building would have approximately 55,000 sq. ft. of floor area. Of this amount, approximately 21,000 sq. ft. would be used for the 50 guest rooms, and the remaining 34,000 sq. ft. would be used for the spa, retail operations, a rooftop terrace and other public areas, circulation, and back-of-house uses. An underground parking garage would be located below the North Hotel Building and would include 54 stalls for valet parking. The North Hotel Building would be a split-level structure with four levels, with a maximum building height of 45 feet.

On the South Parcel, the existing restaurant and five-room motel buildings would be demolished and replaced with a two-story South Hotel Main Building, a two-story South Hotel Barn Building, a freestanding single-story fitness studio, and two separate two-story bungalow buildings. The South Hotel Main Building would include 11 guest rooms, a support kitchen, a library, and back-of-house uses for a total of approximately 11,100 sq. ft. The South Hotel Barn Building would include 12 guestrooms totaling approximately 7,500 sq. ft. and an adjacent plunge pool. The 350-sq. ft. fitness studio would be proximate to the plunge pool. A lawn area would be located between the South Hotel Main Building and the South Hotel Barn Building. Each of the two bungalow buildings would include three rooms for a total of approximately 4,000 sq. ft. between the two buildings. Buildings on the South Parcel would be connected by a series of walkways, breezeways, patios, courtyards, and landscaped areas. The South Parcel also includes six existing on-site residential dwelling units that would be used to house workers employed on the property.

Overall, the project would involve 10,048 sq. ft. of demolition and 78,481 sq. ft. of new construction. Current uses on the project site have 55 employees, and the project is expected to add 48 new employees for the new hotel use, for a total of 103 employees at the project site.

The City of St. Helena has provided water service to the project site since at least the 1930s. Under an agreement modification executed in March 2000, Freemark Abbey Winery receives up to 2.7 million gallons per year (mgy), or 8.3 acre-feet per year (AFY), of water from the City of St. Helena. The North Parcel uses water from two on-site groundwater wells and a connection to the City of St. Helena water system. A separate public water system serves the South Parcel. The project would integrate the proposed hotel development on the South Parcel with the public water system on the North Parcel. The projected annual water demand, including demand for irrigation, the winery process, and domestic water, is 7.1 mgy, or 21.79 AFY. Up to 2.7 mgy, or 8.3 AFY, of water from the City of St. Helena would reduce the demand on project wells to 4.4 mgy, or 13.5 AFY. The daily average well water demand would be 12,055 gallons with a peak demand estimate (200 percent of average) of 24,110 gallons.

The North Parcel currently collects and conveys its wastewater to a Combined Wastewater Management System (CWMS). This system, known as the Markham CWMS, is located on the adjacent Markham Vineyards property and is operated under a waste discharge order approved by the San Francisco Regional Water Quality Control Board. The CWMS currently serves Markham Vineyards, Freemark Abbey, the Culinary Institute, and Wine Country Inn. The Freemark Abbey allocation under the CWMS is 4.0 mgy. Domestic wastewater from the North Parcel, which is estimated to be 3.5 mgy, would be disposed of through the Markham CWMS.

The South Parcel's existing commercial and residential use buildings are served by on-site wastewater treatment systems. Historically, uses in the CL-zoned areas of the South Parcel have disposed of 0.93 mgy of wastewater in systems on the AW-zoned areas of the site. This legacy of shared wastewater disposal would be preserved with the new development. Wastewater from the new South Parcel hotel buildings would be disposed of through discharge to the existing underground septic system and disposal to a new on-site gray water treatment system. The existing shared septic system, which has a capacity is 0.55 mgy, would serve an existing residence at the south end of the parcel (0.13 mgy) and would be used to dispose of black water from the proposed hotel and meeting space (0.42 mgy). Gray water from the hotel would be reclaimed for landscape irrigation (0.60 mgy). A maximum of 0.51 mgy of gray water would be used for irrigation on the AW-zoned areas of the site to maintain the historic balance of 0.93 mgy of CL-zoned wastewater on AW-zoned areas of the site. The gray water treatment would meet NSF 350 requirements for gray water systems in jurisdictions with no local requirements for these systems. Treated gray water would be stored and reused through surface drip irrigation on-site.

Runoff from the project site flows via roof gutters and surface flow to on-site storm drains and natural flow lines that ultimately discharge to the Napa River. The project would include improvements throughout the project site to install new bioretention basins, vegetated buffer strips, and self-retaining areas. The project design incorporates low-impact development design strategies, including stormwater treatment elements, minimization of impervious surfaces, and stormwater control measures. Additionally, the project would be subject to the National Pollutant Discharge Elimination System (NPDES) General Permit because more than 1 acre of land would be disturbed through project construction activities. Pursuant to the NPDES General Permit, a stormwater pollution prevention plan (SWPPP) would be developed and implemented at the project site. In addition to the SWPPP, source control best management practices (BMPs) would be designed and implemented as recommended by the California Stormwater Quality Association's BMP handbooks.

Project information is available online at https://www.countyofnapa.org/2876/Current-Projects-Explorer. Project materials, including the application and technical reports, can be viewed online at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

10. **Describe the Environmental Setting and Surrounding Land Uses:** The project site is located on six parcels totaling approximately 15 acres owned by Jackson Family Investments III, LLC. It includes vineyards, winery operations, wine tasting, retail sales, a restaurant, a café, a five-room motel, commercial buildings, and six residential structures. Vineyards and wineries surround much of the project site, with scattered residential units, including a small mobile home park, located west across SR 29 from the project site. SR 29 and the Vine Trail border the western edge of the project site, and Lodi Lane bisects the site as it travels east from SR 29. The project site and surrounding properties are generally flat.
11. **Tribal Cultural Resources:** Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

    Consultation with Native American tribes pursuant to Public Resources Code Section 21080.3.1 has been initiated. On March 19, 2020, Napa County extended invitations to consult to Middletown Rancheria, Mishewal Wappo, and Yocha Dehe Wintun Nation. Middletown Rancheria has requested consultation on the project and has been in contact with County staff. The Yocha Dehe Wintun Nation responded to the letter, informing the County that the project was not within the aboriginal territories and the tribe declined to comment on the project. The letter to the Mishewal Wappo was returned to the County, and County staff is attempting to resend the letter to the

tribe. The outcome of the consultation process will be discussed in the draft environmental impact report (EIR) for this project.

12. Other Agencies Whose Approval Is Required (e.g., Permits, Financing Approval, or Participation Agreement):

State

- **Bay Area Air Quality Management District:** Authority to construct (for devices that emit air pollutants); permit to operate.
- **California Regional Water Quality Control Board, Region 2 (San Francisco):** Permits for the on-site gray water treatment and reuse system.

Local

- **Napa County:** Approval of a use permit major modification and various ministerial approvals, including building permits and grading permits. The applicant is also seeking approval of a development agreement.

ENVIRONMENTAL IMPACTS AND BASIS OF CONCLUSIONS:

The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. They are based on a review of the Napa County Environmental Resource Maps, the other sources of information listed in the file, and the comments received, conversations with knowledgeable individuals; the preparer's personal knowledge of the area; and, where necessary, a visit to the site. For further information, see the environmental background information contained in the permanent file on this project.

On the basis of this initial evaluation:

☐ I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

☒ I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, or 2) has been addressed by mitigation measures based on the analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature Trevor Hawkes Date 7/23/2020

Name Trevor Hawkes, Planner III

Napa County Planning, Building and Environmental Services Department

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics.				
Except as provided in Public Resources Code Section 21099 (where aesthetic impacts shall not be considered significant for qualifying residential, mixed-use residential, and employment centers), would the project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

DISCUSSION

a-c) The project site is located in a vineyard setting surrounded by rural residences, vineyards, and winery operations, and it contains relatively flat topography. Existing development on the property includes vineyards, winery operations, retail and restaurant buildings, a motel, and residential units. The project would include construction and operation of a 79-room hotel and associated guest amenities, such as a spa, fitness room, and pool. Maximum building height for new structures would be 45 feet. Three buildings would be demolished as part of the project. The project would be visible from off-site public viewpoints, including along adjacent SR 29 and the Vine Trail.

Scenic vistas of Napa Valley ridgelines and vineyards are located east and west of the project site. There are no designated scenic resources in the project vicinity. However, SR 29 is a County-designated scenic road and is eligible for designation as a state scenic highway (Caltrans 2020).

Although the project site is currently developed with existing commercial and residential buildings, implementing the project would result in a change in the visual character of the project site by replacing generally single-story commercial development with multiple multilevel structures and by increasing the overall number of structures on-site. The project design is intended to maintain and complement the existing rural character of unincorporated Napa County and the existing winery operations; however, construction and operation of the project would result in a change to the visual character of and views within the project area and could contribute to aesthetic impacts. Project renderings are included in the project plan set available for review on the County website. Therefore, this is a potentially significant impact and will be analyzed further in the EIR.

d) The project site includes sources of nighttime lighting associated with existing uses. The project would introduce additional nighttime lighting consistent with the hotel use on-site. This new source of light could contribute to adverse effects on nighttime views in the area. This is a potentially significant impact and will be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☒	☐	☐	☐
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☒	☐	☐	☐

DISCUSSION

a) The project site includes lands designated as Prime Farmland and Urban and Built-Up Land by the Farmland Mapping and Monitoring Program (California Department of Conservation 2016a). Because the project site includes Prime Farmland, this impact would be potentially significant and will be analyzed in detail in the EIR.

b) The project site is not subject to a Williamson Act contract (California Department of Conservation 2015). The project site includes lands zoned for AW and CL, with the proposed 79-room hotel and associated guest amenities to be constructed in the CL-zoned parcels. Some site improvements may occur in the AW-zoned land, but they would not interfere with existing agricultural uses. Therefore, impacts related to conflicts with agricultural zoning would be less than significant. This issue will not be analyzed further in the EIR.

c, d) The site is developed with existing buildings, including a winery, restaurant, retail wine shop, art gallery, and small motel, and it is not used or zoned for timber harvest. Although minimal tree removal may be required for the project, no forestland exists on the site. Therefore, there would be no impact on forestland. This issue will not be analyzed further in the EIR.

e) The project would include several new buildings, including the proposed hotel and associated facilities, but would not result in any direct impacts on agricultural resources. Given the proximity of the Prime Farmland and agricultural uses to the proposed development, construction and operation of the 79-room hotel and associated amenities could affect the agricultural uses. Therefore, this impact would be potentially significant and will be analyzed in detail in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.				
Are significance criteria established by the applicable air district available to rely on for significance determinations?	☒ Yes	☐ No		
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐

The project applicant has submitted an air quality and greenhouse gas assessment, which will be utilized in preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a) Construction of the project would result in construction- and operation-related emissions of criteria air pollutants. These project-generated emissions could potentially exceed significance criteria established by the Bay Area Air Quality Management District (BAAQMD) and could potentially conflict with BAAQMD regulations and air quality plans. This potentially significant impact will be analyzed further in the EIR.

b) In Napa County, ozone and particulate matter are the most problematic pollutants (Napa County 2007:4.8-6). Construction of the project would result in construction- and operation-related emissions of criteria air pollutants, including ozone and particulate matter, for which the County is currently in nonattainment (BAAQMD 2017). These project-generated emissions, along with emissions from other development in the region, could potentially exceed significance criteria established by BAAQMD for criteria air pollutants. This potentially significant impact will be analyzed further in the EIR.

c) Construction and operation of the project would generate pollutants near existing rural residences. Use of diesel equipment during construction would be limited in scope and duration. After construction, automobiles would be the primary source of air pollutants. Further analysis of the potential for these anticipated emissions to affect area residents is necessary to determine whether a significant impact would result. This issue will be analyzed in detail in the EIR.

d) Construction of the project would not be expected to generate substantial objectionable odors. The project would involve the operation of a 79-room hotel and associated hotel facilities, as well as a retail space, two pools, a parking garage, and on-site employee housing. None of these uses is expected to generate substantial objectionable odors. However, the project would include on-site bioretention basins, vegetated buffer strips, and self-retaining water areas, all of which could result in operational odor emissions. This potentially significant impact will be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

a) The project site is in a rural area. The project would involve demolition and construction adjacent to existing agricultural uses and west of the Napa River. Special-status plant or wildlife species could potentially occur in the project area and could be directly or indirectly affected by demolition of existing structures or project construction and operation. Further analysis of the potential for the site and surrounding area to support special-status species is necessary to determine whether a significant impact would result. This issue will be analyzed further in the EIR.

b) The project site is fully developed with existing uses and is in an area identified as developed and agricultural cropland (Napa County 2007:4.5-4). No riparian habitat or sensitive natural communities are located on the project site. Therefore, the project would have no impact on riparian habitat or sensitive natural communities. This issue will not be analyzed further in the EIR.

c) The project would be constructed in an area that is currently entirely paved and disturbed, and it would not include disturbance of or placement of fill into any waterways. As discussed further in Section X, "Hydrology and Water Quality," the existing hydrology of the site would be maintained, and the site's contribution to surface water flows into the Napa River would not be affected. Therefore, this impact would be less than significant. This issue will not be analyzed further in the EIR.

d) As discussed above, the project would be located on a property that is currently disturbed, paved, and used for winery, commercial, retail, and restaurant uses. Because the site has been previously developed with buildings and parking areas, implementation of the project is not anticipated to interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established wildlife corridors, nor would it impede the use of native wildlife nursery sites. This impact would be less than significant and will not be analyzed further in the EIR.

e) The Napa County General Plan Conservation Element contains natural resource goals and policies that specifically address protection of biological resources. Construction of the project would be confined to existing disturbed areas within the project boundaries, and it is not anticipated to result in impacts on biological resources or conflict with any policies pertaining to the protection of such resources. However, further analysis is necessary to determine whether a significant impact would result. This issue will be analyzed further in the EIR.

f) The project site is not located in any habitat conservation or natural community conservation plan area (Napa County 2007:4.5-13). Therefore, the project would not conflict with a habitat conservation or natural community conservation plan. This issue will not be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

DISCUSSION

a) A cultural resources study (Tom Origer & Associates 2019) prepared for the project site indicates that the existing buildings on-site are not historic resources. However, a review of the indicates that physical evidence of human activities more than 45 years old may be recorded for purposes of inclusion in the Office of Historic Preservation's filing system. Because some of the buildings are more than 45 years old, impacts related to historical resources on-site could be potentially significant. This issue will be analyzed further in the EIR.

b) Known cultural or archaeological resources are located on the project site, and many regions of Napa County are highly sensitive for the presence of archaeological resources because of the settlement pattern of indigenous populations (Napa County 2007:4.12-17). Such archaeological resources could be undisturbed beneath the project site, and removal of the existing surface material during grading and excavation activities could expose (and possibly damage or destroy) sensitive resources. This impact would be potentially significant. Implementing Mitigation Measure CUL-1, described below, would reduce this impact to less than significant. Therefore, this issue will not be analyzed further in the EIR.

d) No human remains have been found previously on the project site. However, the potential for human remains to occur below the ground surface in the project area is currently unknown. Implementation of the project would involve soil disturbance during construction, which could result in impacts on any interred on-site human remains. This impact would be potentially significant. Implementing Mitigation Measure CUL-1, described below, would reduce this impact to less than significant. Therefore, this issue will not be analyzed further in the EIR.

Mitigation Measure CUL-1:

- In accordance with State CEQA Guidelines Subsection 15064.5(f), if site contractors encounter cultural resources during ground-disturbing activities of the project, the permittee and his or her contractors shall halt work within 50 feet of the find and immediately contact a qualified archaeologist (36 Code of Federal Regulations Part 61) to assess the significance of the find. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and would be discussed in consultation with the applicant, Napa County, and/or any other relevant regulatory agency, as appropriate.

- If site contractors encounter human remains during ground-disturbing activities of the project, the permittee and his or her contractors shall immediately notify the Napa County coroner of the find to determine whether an investigation of the cause of death is required and/or if the remains are of Native American origin. Pursuant to Public Resources Code Section 5097.98, if such remains are of Native American origin, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

- The permittee shall ensure that all persons working on-site shall be bound by contract and instructed in the field to adhere to these provisions and restrictions.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☒	☐	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☒	☐	☐	☐

DISCUSSION

a, b) Project construction and operation activities would require energy resources, such as fuel and electricity. The EIR will include calculation of potential energy use for construction and operation (mobile and stationary sources). This issue is potentially significant and will be analyzed in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Geology and Soils. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The project applicant has submitted a geotechnical report, which will be utilized in preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a) The project site is not located in an Alquist-Priolo active fault zone; however, several active faults are located in the region, including the Green Valley, West Napa, and Rogers Creek Faults (California Department of Conservation 2016b). The project would include construction of several buildings associated with hotel, retail, and residential uses that would be occupied by humans. The buildings would be constructed in conformance

with the standards contained in California Building Code Title 24, which identifies specific design requirements to reduce damage from strong seismic ground shaking, ground failure, landslides, soil erosion, and expansive soils. The project itself would not increase the risk of seismic events or exacerbate hazards from such events. Therefore, this impact would be less than significant and will not be analyzed further in the EIR.

b) The project would involve soil disturbance, including grading and excavation activities, associated with construction of new hotel and other on-site buildings, as well as the underground parking garage. Potential impacts related to erosion are discussed further in Section X, "Hydrology and Water Quality," below, and can be addressed using common and accepted practices to manage runoff and prevent pollution of stormwater. With incorporation of standard measures required by the County, in addition to conformance with standards required through SWPPP and BMP implementation, the effect of soil disturbance during construction would be less than significant. Project design includes minimization of impervious surfaces and stormwater control measures, as well as incorporation of landscaping, lawn, gravel, and decomposed granite and permeable paved surfaces that would reduce the potential for erosive stormwater flows. Therefore, the potential for the project to result in substantial erosion or loss of topsoil during operation would be less than significant. This issue will not be analyzed further in the EIR.

c) As described for item a) above, the project site is located in a seismically active area. However, the project site and the surrounding area are flat. For this reason, the project would not be expected to be prone to landslides, lateral spread, subsidence, liquefaction, or collapse. Furthermore, the project would not increase the risk of such events. Therefore, this impact would be less than significant and will not be analyzed further in the EIR.

d) Expansive soils are soils that are high in clays or silts and that swell and shrink with wetting and drying, respectively. This shrinking and swelling can result in differential ground movement, which can cause damage to foundations. However, proper fill selection, moisture control, and compaction during construction can prevent these types of soils from causing significant damage. In compliance with Section 1803 of the California Building Code, the project applicant would be required to arrange for soil investigations to be performed by a registered engineer to determine the presence of expansive soils before construction. If the project site is determined to contain expansive soils, the project applicant would be required to provide design and construction solutions to reduce the risks associated with unstable and expansive soils. Therefore, the project would result in less-than-significant impacts related to expansive soils, and this issue will not be analyzed further in the EIR.

e) The North Parcel of the project site is served by the existing Markham CWMS, whereas the South Parcel is served by on-site wastewater treatment systems. No new septic tanks are proposed as part of the project. The project does, however, propose a gray water treatment system wherein reclaimed gray water would be treated and reused on-site for landscape irrigation. The project applicant has submitted a geotechnical report that concluded that the project site is suitable from a geotechnical perspective for the planned improvements (Miller Pacific 2019:8). Because site soils would be appropriate for the planned project, this impact would be less than significant. This issue will not be analyzed further in the EIR.

f) No known paleontological resources are located on the project site; however, the potential for discovery of such resources exists because of the high biodiversity in the Napa Valley region (Napa County 2007:4.12-17). This impact would be potentially significant because paleontological resources could be discovered during project construction. Implementing Mitigation Measure GEO-1, described below, would reduce effects on previously unknown paleontological resources if any are discovered during project construction. With implementation of this mitigation, the impact would be less than significant. Therefore, this issue will not be analyzed further in the EIR.

Mitigation Measure GEO-1

- If site contractors discover paleontological resources during ground-disturbing activities of the project, the permittee and his or her contractors shall halt work in that area and within 50 feet of the find and immediately contact a qualified paleontologist to evaluate the find. Construction activities could continue in other areas. If the discovery proves to be significant under Society of Vertebrate Paleontology criteria, additional work, such as fossil recovery excavation, may be warranted and would be discussed in consultation with the applicant, Napa County, and/or any other relevant regulatory agency, as appropriate.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

The project applicant has submitted an air quality and greenhouse gas assessment, which will be utilized during preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a) Construction and operation of the project would result in the emission of greenhouse gases (GHGs), which could contribute considerably to cumulative climate change impacts. This potentially significant impact will be analyzed further in the EIR.

b) The emission of GHGs associated with project construction and operation could conflict with General Plan policies and local and regional plans for reduction of GHG emissions. This potentially significant impact will be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

DISCUSSION

a) Construction and operation of the project would not be expected to involve the use of or generate large quantities of hazardous materials. However, construction activities, including demolition, would involve the use of commercially available hazardous materials, such as solvents, gasoline, and oil. During operation, hazardous materials, such as cleaners, solvents, and fuels, would be used during hotel operations. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government. Although it is not anticipated that the routine use of these materials, handled in accordance with laws and regulations, would create a significant hazard to the public or the environment, the facility operator would be required to file a hazardous materials business plan with the County Environmental Health Division if the quantity of hazardous materials on-site reach reportable levels during construction or,

subsequently, as part of hotel operations. This impact would be less than significant and will not be analyzed further in the EIR.

b) Data on historic and documented releases of hazardous materials in the surrounding area were obtained through internet searches, including review of the State Water Resources Control Board GeoTracker database, the U.S. Environmental Protection Agency Envirofacts/Enviromapper website, and the state Cortese list via the California Department of Toxic Substances Control (DTSC) EnviroStor database (DTSC 2020). No hazards were identified on-site. However, buildings on the project site that would be demolished may be constructed of materials containing lead and/or asbestos. Removal of these materials must be done in compliance with applicable local, state, and federal laws regarding the safe removal and disposal of materials. This impact would be less than significant and will not be analyzed further in the EIR.

c) No schools are located within 0.25 mile of the project site. Therefore, there would be no impact on nearby schools. This issue will not be analyzed further in the EIR.

d) As described for b) above, the project site does not contain known hazards, and it is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, there would be no impact related to hazardous materials sites. This issue will not be analyzed further in the EIR.

e) The project site is not located within 2 miles of a public airport and is not located in an airport land use plan. No impact would occur; therefore, this issue will not be analyzed further in the EIR.

f) As described for e) above, the project site is not located in the vicinity of a private airstrip or within 2 miles of a private airstrip. No impact would occur; therefore, this issue will not be analyzed further in the EIR.

g) The project, which includes construction of multiple structures on-site, would be required to comply with standard County conditions of approval related to the provision of adequate access for emergency vehicles and secure evacuation routes.

The Napa County Emergency Operations Plan (EOP) outlines procedures, including those related to establishing the leadership roles and responsibilities of various agency staff, that guide local preparedness, response, recovery, and resource management efforts associated with occurrence of a natural disaster, significant emergency, or other threats to public safety. The project would not modify any County-owned roads or access points to the project site from SR 29.

No component of the implementation of the EOP would be impaired by the proposed project, nor would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant. Therefore, this issue will not be analyzed further in the EIR. See Section XV, "Public Services," for more detailed discussion regarding emergency response.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial on- or offsite erosion or siltation;	☒	☐	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☒	☐	☐	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☒	☐	☐	☐
iv) Impede or redirect flood flows?	☒	☐	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐

The project applicant has submitted a stormwater control plan, which will be utilized during preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a; c-i, ii, iii, iv)

All earth-disturbing activities during construction would be subject to the County's Stormwater Ordinance, which requires applicants and contractors to implement measures to prevent erosion, sedimentation, and waste materials from entering waterways both during and after any construction activities. With implementation of the SWPPP and the County's BMPs, which comply with regional water quality control board requirements, the project would not have the potential to significantly affect water quality and discharge standards during construction.

During operation, the project has the potential to generate polluted runoff associated with storage of cleaning chemicals, as well as vehicle leaks. The Napa County Post-Construction Runoff Management Requirements and Provision E.12 (Post-Construction Stormwater Management Plan) of the Small Municipal Regional Stormwater Permit, Order No. 2013-0001-DWQ, include postconstruction stormwater BMPs. The goal of Provision E.12 is to include appropriate source control, site design, and stormwater treatment measures in development projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects.

The project applicant has submitted a technical report regarding stormwater and the project's anticipated provisions for stormwater and water quality. A peer review of this technical report will be conducted, and the resulting impact analysis will be included in the EIR. Because operation of the project has the potential to result in impacts related to water quality, this issue is potentially significant and will be analyzed in the EIR.

b, e) The project would use a combination of public water provided by the City of St. Helena, groundwater, and gray water. The project applicant has submitted a report documenting the availability of water for the project. This report will be evaluated and used for the analysis in the EIR. Because the project would require groundwater, the project could decrease groundwater supplies. Therefore, this issue is potentially significant and will be analyzed in the EIR.

d) According to Napa County Geographic Information System online interactive mapping, the project site is not located in or adjacent to a floodway and is in an area of minimal flood hazard. Also, the terrain of the project site and surrounding area is generally flat. The project site is not in a flood hazard, tsunami, or seiche zone, thereby reducing the risk of release of pollutants from inundation in one of those zones. There would be no impact related to being in a flood hazard, tsunami, or seiche zone; therefore, this issue will not be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐

DISCUSSION

a) The project would be located on private property in a rural agricultural portion of the Napa Valley. Because the project would be limited to construction and operation within a previously developed property situated between residences and vineyards, the project would not divide an established community. Therefore, there would be no impact. This issue will not be analyzed further in the EIR.

b) Requests for discretionary permits in Napa County are subject to review for compliance and consistency with a variety of policy and regulatory programs that have been adopted to avoid or reduce the severity of potential environmental effects. Such regulations include the General Plan policies and adopted mitigation measures of the General Plan EIR; area specific plans, where applicable; subdivision, zoning, and other ordinances incorporated into the Napa County Code; and various other resolutions and policy documents adopted by County decision-making bodies. The project is subject to review for compliance and consistency with the County zoning ordinance and General Plan EIR mitigation measures adopted as policies in the General Plan. This impact is potentially significant; therefore, the EIR will analyze the project's consistency with applicable plans, policies, and regulations.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Mineral Resources. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

DISCUSSION

a, b) Napa County contains four active mines (rock quarries), two of which are not presently being mined but serve only as mineral storage areas. These quarries produce construction materials. The only significant mine currently in operation in Napa County is the Syar Napa Quarry, operated by Syar Industries, which is more than 20 miles south of the project site (WICC 2005).

The project site is not located in a mapped mineral resource zone. No loss of availability of a known mineral resource that would be of value to the region and the residents of the state would occur. There are no locally important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan that includes the project area. Therefore, there would be no impact related to mineral resources. This issue will not be analyzed further in EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Noise. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☒	☐	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The project applicant has submitted an environmental noise and vibration assessment, which will be utilized during preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a) Project construction would result in a temporary increase in noise levels. Construction-related noise sources would include both mobile and stationary on-site equipment (e.g., bulldozers, backhoes, front end loaders, graders, pavers, generators, and compressors), as well as impact tools. Construction would also generate vehicle noise associated with the delivery of building supplies and hauling away of construction debris. Construction activities would be limited to daylight hours using properly muffled vehicles; noise generated during this time is not anticipated to be significant. All construction activities would be required to be conducted in compliance with the Napa County Noise Ordinance (County Code Chapter 8.16), which establishes noise limits for construction activities during permissible hours and prohibits nonemergency noise-generating construction activities between the hours of 7:00 p.m. and 7:00 a.m.

The Napa County Noise Ordinance sets the maximum permissible received sound level for a rural residence at 45 decibels (dB) between the hours of 10:00 p.m. and 7:00 a.m. Although the 45-dB limitation is strict (45 dB is roughly equivalent to the sound generated by a quiet conversation), the area surrounding the subject property is not densely developed. The project's consistency with applicable County regulations and the potential to expose people working or residing in the area to excessive noise levels will be analyzed in the EIR.

The project would include a 79-room hotel, retail space, a spa, and other hotel-associated facilities. Occupants of nearby rural residences located north, east, south, and west of the project site could be affected by the traffic noise and noise generated from operation of the project, as well as any periodic events that could be hosted on-site. The project applicant has submitted an environmental noise and vibration assessment, which will be used in the analysis of project impacts. This potentially significant impact will be analyzed further in the EIR.

b) Equipment used during demolition and construction of the project may generate ground-borne vibration that could affect existing sensitive land uses. This impact would be potentially significant and will be analyzed further in the EIR.

c) The project site is not within an airport land use plan and is more than 17 miles east of the nearest major airport, Charles M. Schultz – Sonoma County Airport. Additionally, the project site is more than 24 miles north of the Napa County Airport. The project site is outside of the boundaries of both the Sonoma County Airport Land Plan and the Napa County Airport Land Use Plan. No impact would result; therefore, this issue will not be analyzed further in the EIR.

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV.	Population and Housing. Would the project:				
a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒	☐	☐	☐
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

a) The project includes the construction of a new hotel and associated guest amenities, including a spa, a fitness studio, and gathering spaces. The six residential units on the project site would be retained to house employees during project operation. New employment positions generated by project construction and operation would likely be filled by workers already in the region. Napa County, like much of California, has a shortage of housing, particularly housing for employees in the region who must often commute from outside the county. Because it is possible that the new jobs generated by the project could attract workers to the area, there is the potential to induce population growth. This potentially significant impact will be analyzed in the EIR.

b, c) The project would not remove any existing homes. Therefore, the project would have no impact related to the displacement of homes or people. This issue will not be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☒	☐	☐	☐
Police protection?	☒	☐	☐	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

DISCUSSION

a) The project does not include new residential units, so it would not generate new residents. Because residents are associated with additional demand for schools and park facilities, these public services would not be affected by the project.

The project would include operation of a new 79-room hotel and associated guest amenities. Although police and fire staffing ratios are generally associated with the number of new residents, additional commercial development may also generate additional need for fire and police services. Because the demand for fire or law enforcement protection may increase with implementation of the project, this impact would be potentially significant and will be analyzed further in the EIR.

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI.	Recreation. Would the project:				
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b)	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

a) The project would not increase the number of residents in the area, but it would increase the number of employees at the project site. As previously discussed, new employment at the project site would be filled by workers currently living in the Napa County region; thus, an increase in recreational use resulting from employment generated at the site is not anticipated, and impacts related to the use of existing recreational facilities would be less than significant. This issue will not be analyzed further in the EIR.

b) The project does not include public recreational facilities. Therefore, there would be no impact related to the construction or expansion of public recreational facilities. The project includes on-site recreational facilities (e.g., pool, fitness center, and spa) that would be used exclusively by hotel guests. Because these private on-site facilities are part of the project description, their construction would not result in physical effects not discussed in this initial study. This issue will not be analyzed further in the EIR.

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.	Transportation. Would the project:				
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☒	☐	☐	☐
b)	Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☒	☐	☐	☐
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d)	Result in inadequate emergency access?	☒	☐	☐	☐

The project applicant has submitted a traffic impact study, which will be utilized during preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a, d) The project site is located east of SR 29 and occupies property north and south of Lodi Lane. Primary access would be provided by existing entrances on SR 29 and Lodi Lane. The project includes a paved driveway and turnaround/drop-off area adjacent to the North Hotel Building, as well as on the southeastern portion of the site near the South Hotel Main Building. Because the project site offers multiple entrance and egress points and is located on a major county road (SR 29) and a large arterial (Lodi Lane), emergency vehicle access is currently provided and would continue to be maintained through project construction and operation.

The project applicant has provided a traffic impact study, which includes analysis of alternative transportation modes, access, and circulation. This study will be used to evaluate project impacts in the EIR. This potentially significant impact will be analyzed further in the EIR.

b) CEQA Guidelines Section 15064.3(b) sets forth criteria for analyzing transportation impacts and determining level of significance. The appropriate metric to be used to determine whether a project would result in significant transportation impacts is vehicle miles traveled (VMT). The project would induce VMT from worker commute trips and guest trips to and from the project site. Therefore, this impact is potentially significant and will be analyzed in the EIR.

c) The project does not include any changes to existing road, bicycle, or pedestrian infrastructure and would not introduce any transportation design features that would be considered hazardous. The Vine Trail bike path is located along the project site frontage on SR 29. The project would not add additional points of ingress and egress from SR 29 and would therefore not increase hazards to users of the Vine Trail. If any modification to site access points is needed, such modifications would be required to comply with California Department of Transportation and County standards. Therefore, the project will not result in any impacts related increased traffic hazards or incompatible uses, and this issue will not be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Tribal Cultural Resources.				
Has a California Native American Tribe requested consultation in accordance with Public Resources Code Section 21080.3.1(b)?	☒ Yes	☐ No		
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☒	☐	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☒	☐	☐	☐

DISCUSSION

a, b) Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014 and effective on July 1, 2015, established a new class of resources under CEQA: "tribal cultural resources." AB 52, as provided in Public Resources Code Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon receiving a written request from a California Native American tribe, begin tribal consultation after the lead agency determines that the application for the project is complete or before the release of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration.

The requirements of AB 52 apply to the project and its EIR process. On March 19, 2020, Napa County extended invitations to consult to Middletown Rancheria, Mishewal Wappo, and Yocha Dehe Wintun Nation. Middletown Rancheria has requested consultation on the project and has been in contact with County staff. The Yocha Dehe Wintun Nation responded to the letter, informing the County that the project was not within the aboriginal territories and the tribe declined to comment on the project. The letter to the Mishewal Wappo was returned to the County, and County staff is attempting to resend the letter to the tribe.. Because consultation is ongoing, this impact is potentially significant and will be analyzed in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. Utilities and Service Systems. Would the project:				
a) Require or result in the relocation or construction of construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	☒	☐	☐	☐
b) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☒	☐	☐	☐
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☒	☐	☐	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

The project applicant has submitted a water availability analysis and wastewater feasibility report, which will be utilized during preparation of the Draft EIR. Project materials, including the application and technical reports, can be found on the County website at: https://pbes.cloud/index.php/s/5ybiJ33kpd7S7Yf.

DISCUSSION

a) The project includes a 79-room hotel with associated guest amenities such as lounge space, a spa with treatment rooms, a main pool and a small plunge pool, a parking garage, a rooftop terrace, a fitness room, an outdoor lawn and gathering space, back-of-house uses, and on-site employee housing. Although the project would use existing infrastructure for water supply, wastewater/stormwater conveyance, and electricity where feasible, it is possible that existing water conveyance infrastructure would be upgraded and/or replaced. As previously described, the project would integrate the proposed hotel development on the South Parcel with the public water system on the North Parcel. Additionally, a new on-site gray water treatment system would be constructed to treat wastewater produced by the South Parcel hotel buildings. The gray water treatment would meet NSF 350 requirements for gray water systems in jurisdictions with no local requirements for these systems. The project would also involve construction of new stormwater management infrastructure, including installation of new bioretention basins, vegetated buffer strips, and self-retaining areas.

The potential environmental effects of construction activities on the project site are evaluated throughout this initial study as part of the proposed project. Any utility-related construction activities would occur in compliance with BMPs set forth in the NPDES General Permit and as recommended by the California

Stormwater Quality Association's BMP handbooks. The potentially significant impact related to construction or relocation of new or expanded utility infrastructure will be analyzed further in the EIR.

b) Existing water supply is provided by two on-site groundwater wells and a connection to the City of St. Helena water system on the North Parcel, whereas a separate public water system serves the South Parcel. Implementation of the project would generate increased water demand from the existing entitlement of 2.7 mgy (8.3 AFY) to 7.1 mgy (21.79 AFY). Therefore, the net increase in water demand would be 4.4 mgy (13.5 AFY). This projection includes demand for irrigation, the winery process, and domestic water. As previously described, project implementation would integrate the proposed hotel development on the South Parcel with the public water system, on the North Parcel. The project applicant has submitted a water availability analysis, which will be used in the EIR. Because the project would increase water demand, this issue is potentially significant and will be analyzed in the EIR.

c) As previously described, wastewater at the North Parcel is served by the Markham CWMS. The South Parcel's existing commercial and residential use buildings are served by on-site wastewater treatment systems. Through project implementation, domestic wastewater from the North Parcel would continue to be disposed of through the Markham CWMS while wastewater from the new South Parcel hotel buildings would be disposed of through discharge to the existing underground septic system and disposal to a new on-site gray water treatment system. Any treated gray water would be stored and reused through surface drip irrigation on-site. The impact related to wastewater is potentially significant and will be analyzed further in the EIR.

d, e) The project would include demolition of three buildings on the site. These structures total 10,048 sq. ft. Demolition activities would also include removal of existing asphalt concrete driveways and parking areas, as well as concrete slabs. In addition, operation of the project would result in the production of waste related to the proposed hotel and associated facilities, as well as retail uses. The nearest waste disposal site is the Clover Flat Landfill, which is approximately 4 miles north of the project site. Upper Valley Disposal and Recycling, which is located approximately 4.75 miles southeast of the project site, provides waste, recycle, and compost services in the county. Waste disposed of at this facility is ultimately disposed of at the Clover Flat Landfill, which is permitted to receive 600 tons of waste per day. As of September 2012, the landfill had a remaining capacity of more than 4.5 million cubic yards. The landfill is expected to remain in operation until the end of 2047 (CalRecycle 2019). In accordance with Section 5.408 of the California Green Building Standards Code, the project would implement a construction waste management plan for recycling and/or salvaging for reuse a minimum of 65 percent of construction and demolition debris generated during project construction. Additionally, project implementation would comply with all federal, state, and local regulations related to the disposal of waste. This less-than-significant impact will not be analyzed further in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. Wildfire.				
Is the project located in or near state responsibility areas or lands classified as high fire hazard severity zones?	☒ Yes	☐ No		
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☒	☐	☐	☐
c) Require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☒	☐	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☒	☐	☐	☐

DISCUSSION

a-d) The project site is not within a State Responsibility Area (SRA) or on lands classified as High Fire Hazard Severity Zones, but there are SRA areas opposite the project site, on the other side of SR 29 (CAL FIRE 2007). Although the project site is in a Local Responsibility Area and not in a High Fire Hazard Severity Zone, wildfire activity in the Napa Valley is of concern for all development. Because of the project site's proximity to SRAs, impacts related to wildfire are potentially significant and will be analyzed in the EIR.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

DISCUSSION

a) Additional evaluation is necessary to determine whether the project would affect sensitive and special-status biological resources. This potentially significant impact will be analyzed further in the EIR.

b) Generally, because of the limited scope of the project, implementation would not result in cumulatively considerable contributions to the cumulative effects of development in the area. Evaluation of the project's contribution to cumulative impacts related to agricultural resources, aesthetics, air quality and GHG emissions, biological resources, cultural and tribal cultural resources, energy, hydrology and water quality, noise, population and housing, public services and utilities, transportation, and wildfire will be evaluated after the project impacts are characterized in the EIR. This potentially significant impact will be analyzed further in the EIR.

c) The EIR will evaluate environmental effects that could cause substantial adverse effects on human beings associated with the operation of this project, either directly or indirectly. This potentially significant impact will be analyzed further in the EIR.

REFERENCES

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2017 (January). Air Quality Standards and Attainment Status. Available: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed July 2020.

CAL FIRE. *See* California Department of Forestry and Fire Protection.

California Department of Conservation. 2015a. Napa County Williamson Act FY 2015/2016. Farmland Mapping and Monitoring Program, 1:100,000 Scale. Sacramento: California Department of Conservation, Division of Land Resource Protection.

———. 2015b. Fault Activity Map of California (2010). California Geological Survey. Available: http://maps.conservation.ca.gov/cgs/fam/. Accessed December 14, 2016.

———. 2017. Napa County Important Farmland 2014. Farmland Mapping and Monitoring Program, 1:100,000 Scale. Sacramento: California Department of Conservation, Division of Land Resource Protection.

California Department of Forestry and Fire Protection. 2008 (September 24).Napa County Very High Fire Hazard Severity Zones in LRA. Available: https://osfm.fire.ca.gov/media/6732/fhszl_map28.pdf. Accessed July 2020.

California Department of Resources Recycling and Recovery. 2019. SWIS Facility Detail, Clover Flat Resource Recovery Park (28-AA-0002). Available: https://www2.calrecycle.ca.gov/SWFacilities/Directory/28-AA-0002/Detail/. Accessed July 2020.

California Department of Toxic Substances Control. 2020. EnviroStor database. Available: http://www.envirostor.dtsc.ca.gov/public/. Accessed July 2020.

California Department of Transportation. 2020. Scenic Highways. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed July 9, 2020.

CalRecycle. *See* California Department of Resources Recycling and Recovery.

Caltrans. *See* California Department of Transportation.

DTSC. *See* California Department of Toxic Substances Control.

Miller Pacific. *See* Miller Pacific Engineering Group.

Miller Pacific Engineering Group. 2019 (January). *Geotechnical Investigation, Inn at the Abbey, 3000 St. Helena Highway North, St. Helena, California*. Novato, CA.

Napa County. 2007 (February). *Napa County General Plan Update Draft Environmental Impact Report*. Napa, CA.

———. 2008 (June). *Napa County General Plan.* Napa, CA.

Napa Valley Transportation Authority. 2013 (September). *Napa Valley Vine Trail Project Plan*.

NVTA. *See* Napa Valley Transportation Authority.

State Water Resources Control Board. 2020. GeoTracker database. Available: http://geotracker.waterboards.ca.gov/. Accessed July 2020.

SWRCB. *See* State Water Resources Control Board.

Tom Origer & Associates. 2019 (February 1). *Cultural Resources Study for the Inn at the Abbey Project Napa County, California*.

Watershed Information Center & Conservancy of Napa County. 2005. Chapter 2, Mineral and Rock Resources. *In Napa County Baseline Data Report*. Available: http://www.napawatersheds.org/app_pages/view/ 196 and http://www.napawatersheds.org/files/managed/Document/2374/Ch02_MineralResources.pdf. Accessed December 2016.

WICC. *See* Watershed Information Center & Conservancy of Napa County.

Appendix C

Air Quality and Greenhouse Gas Technical Report

INN AT THE ABBEY

Air Quality and Greenhouse Gases Technical Report

Prepared for
Jackson Family Investments III, LLC

February 2025

ESA

INN AT THE ABBEY

Air Quality and Greenhouse Gases Technical Report

Prepared for
Jackson Family Investments III, LLC

February 2025

787 The Alameda
Suite 250
San Jose, CA 95126
408.660.4000
www.esassoc.com

ESA

Bend	Oakland	San Diego
Camarillo	Orlando	San Francisco
Delray Beach	Pasadena	Santa Monica
Destin	Petaluma	Sarasota
Irvine	Portland	Seattle
Los Angeles	Sacramento	Tampa

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper. ESA saved the following resources:

CHAPTER 1
Introduction

1.1 Background and Purpose

This Air Quality and Greenhouse Gases (GHG) Technical Report was prepared for the Inn at the Abbey Project (Project) located on a 15-acre portion on the existing Freemark Abbey Winery property in unincorporated Napa County, California. The purpose of this report is to describe the existing conditions in the Project area and evaluate criteria air pollutant, toxic air contaminant (TAC), and GHG emissions generated by construction and operation of the Project.

1.2 Project Description

As part of the Project, a Major Use Permit Modification is proposed to accommodate development of a boutique hotel within the existing Freemark Abbey Winery complex. The Project would demolish three existing structures used as a restaurant, retail wine shop, art gallery, and five-room motel and construct a 79-room hotel that would be split between the North Parcel (50 rooms) and the South Parcel (29 rooms). Demolition activities would also include removal of asphalt concrete driveways and surface parking areas, as well as concrete slabs. Overall, the Project would involve 10,050 square feet of demolition and approximately 78,500 square feet of new construction. Project construction is expected to begin in spring of 2024 and occur over approximately 36 months.

1.3 Environmental Setting

The Project is located in the San Francisco Bay Air Basin (SFBAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAB comprises the counties of Alameda, Santa Clara, San Mateo, Contra Costa, Napa, and Marin, and parts of Sonoma and Solano counties.

1.3.1 Criteria Air Pollutants

Criteria air pollutants are a group of six common air pollutants for which the U.S. EPA has set ambient air quality standards. Criteria air pollutants include ground level ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. PM is classified by particle size—PM_{10} consists of particulate matter that is 10 microns or less in diameter, while $PM_{2.5}$ refers to the subset of PM_{10} that is less than 2.5 microns or less in diameter.[1] Most of the criteria air pollutants are directly emitted; however, ozone is a secondary

[1] A micron is one-millionth of a meter.

pollutant that is formed in the atmosphere by chemical reactions between nitrogen oxides (NO_x), and reactive organic gases (ROG) in the presence of sunlight.

Under amendments to the federal Clean Air Act (CAA), the United States Environmental Protection Agency (U.S EPA) has classified air basins or portions thereof as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as "attainment" or "non-attainment" for the California Ambient Air Quality Standards (CAAQS). Thus, areas in California have two sets of attainment designations: one set with respect to the NAAQS and one set with respect to the CAAQS. In many cases, the CAAQS are lower than the NAAQS.

The SFBAB is designated non-attainment for federal one-hour ozone, federal $PM_{2.5}$, state one-hour ozone, state 8-hour ozone, state PM_{10}, and state $PM_{2.5}$ standards. Therefore, the analysis presented below focuses on ozone precursors (ROG and NOx) and particulate matter (PM_{10} and $PM_{2.5}$). The BAAQMD is the primary agency responsible for assuring both sets of ambient air quality standards are attained and maintained in the SFBAB.

TABLE 1 SFBAAB ATTAINMENT STATUS

Pollutant and Averaging Time	Designation/Classification	
	State Standards	Federal Standards
Ozone (1-hour)	Non-attainment	No Federal Standard
Ozone (8-hour)		Non-attainment
Carbon Monoxide (CO)	Attainment/Unclassified	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Attainment	Unclassified/Attainment
Respirable Particulate Matter (PM_{10})	Non-attainment	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Non-attainment	Non-attainment

ABBREVIATIONS: SFBAAB = San Francisco Bay Area Air Basin; CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10.0 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns.

SOURCE: Bay Area Air Quality Management District, 2017. *Air Quality Standards and Attainment Status*. Available at https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed May 2024.

1.3.2 Toxic Air Contaminants

TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. TACs of concern for the Project include diesel particulate matter (DPM) and $PM_{2.5}$.

1.3.3 Greenhouse Gases

GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that is received by the Earth and is reflected back into space—a phenomenon referred to as the "greenhouse effect." Some GHGs occur naturally and are necessary for keeping the Earth's atmosphere warm and its surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years cause solar radiation to be trapped and decrease the amount of radiation that is reflected into space, intensifying the natural greenhouse effect, and resulting in the increase of global average temperature.

Carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, methane, and nitrous oxide occur naturally and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. Nitrous oxide emissions are also largely attributable to agricultural practices and soil management. Other human-generated GHGs such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, methane and nitrous oxide are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2 respectively, which has a GWP of 1.[2]

In emissions inventories, GHG emissions are typically reported as metric tons (MT)[3] of CO_2 equivalent (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While methane and nitrous oxide have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from land development and human activity in general.

1.4 Sensitive Receptors in the Project Vicinity

The Project is located on a 15-acre site at Lodi Lane along SR 29, approximately 0.5 mile north of the city limits of St. Helena, in unincorporated Napa County. The Project site is divided into two sections separated by Lodi Lane: The "North Parcel" is approximately 10.27 acres and is located north of Lodi Lane. The North Parcel is bounded by vineyards to the north, a commercial inn to the east, Lodi Lane to the south, and State Route (SR) 29 to the west. The "South Parcel" is

[2] California Air Resources Board (CARB), *GHG Global Warming Potentials*. Available at: ww2.arb.ca.gov/ghg-gwps. Accessed May 8, 2023.

[3] The term metric ton is commonly used in the U.S. to refer to the metric system unit, tonne, which is defined as a mass equal to 1,000 kilograms. A metric ton is approximately 1.1 short tons and approximately 2,204.6 pounds.

approximately 6.53 acres and is located south of Lodi Lane. The South Parcel is bounded by Lodi Lane to the north, agricultural uses to the east and south, and SR 29 to the west.

Existing uses in the Project vicinity are primarily commercial (e.g., vineyards and wineries) and residential. Vineyards and wineries surround much of the Project site, with scattered residential units, including a small mobile home park located west of the Project site, across SR 29. Existing uses to the north include vineyards and the Trinchero Napa Valley Winery. The Wine Country Inn & Cottages is located to the northeast of the Project site. SR 29 and the Vine Trail border the western edge of the Project site and Lodi Lane bisects the site as it travels east from SR 29. Existing uses to the south include various vineyards and residential housing.

CHAPTER 2
Methodology

2.1 Approach to Analysis

2.1.1 Criteria Air Pollutants

The analysis presented below follows the guidelines and recommendations for the BAAQMD in its 2022 CEQA Guidelines. Potential air quality impacts are assessed by estimating average daily emissions generated by Project construction using tools and methods consistent with the latest version of the California Emissions Estimator Model (CalEEMod) and comparing them to the BAAQMD's project-level thresholds of significance. CalEEMod was developed in collaboration with California air districts and is recommended by BAAQMD for use in air quality analyses. BAAQMD construction-related thresholds are based on average daily emissions in pounds per day. **Table 2** identifies significance thresholds for criteria air pollutants adopted by BAAQMD for both construction and operations. The table is followed by a discussion of the Project's sources of criteria air pollutants and analysis methods. Projects with criteria air pollutant emissions below these significance thresholds would not obstruct implementation of the applicable air quality plan or result in a cumulatively considerable net increase in non-attainment criteria air pollutants within the SFBAB.

TABLE 2
BAAQMD AIR QUALITY THRESHOLDS – CRITERIA AIR POLLUTANTS

Pollutant	Construction Emissions Average Daily (pounds per day)	Operational Emissions	
		Average Daily (pounds per day)	Maximum Annual (tons per year)
NOx	54	54	10
ROG	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	None	

Note: NOx = oxides of Nitrogen; ROG = reactive organic gases; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns

SOURCE: BAAQMD, *2022 CEQA Guidelines*. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3. April 2023. Accessed June 2024.

Construction Activities and Emissions

Construction of the Project has the potential to create air quality impacts from the use of heavy-duty off-road construction equipment, construction workers' vehicle trips, and vendor truck trips. Construction criteria air pollutant and TAC emissions were estimated using methods and

emission factors consistent with the most recent version of CalEEMod. Demolition, grading, hauling, and other ground-disturbing activities also result in fugitive dust emissions.

Off-Road Equipment

Construction of the Project would emit criteria air pollutant emissions from:

- demolition of existing structures;
- site preparation and grading;
- construction of new buildings;
- architectural coating of interior and exterior surfaces; and
- paving.

These activities involve the use of on-site construction equipment, construction workers' vehicle trips, hauling truck trips, and vendor truck trips. Use of diesel equipment and vehicles would emit predominantly NOx, while architectural coating and paving would emit mainly ROG, both ozone precursors. The assessment of construction criteria air pollutant impacts considers each of these potential sources. Construction criteria air pollutant and TAC emissions were based on project-specific data provided by the project applicant, including a construction equipment list and a construction schedule.

For diesel-powered off-road construction equipment, emissions were calculated using methods and tools consistent with CalEEMod assuming fleet average equipment, meaning the emission factors used reflect the fleet predicted to be in use at the time of construction in the OFFROAD2017 model, which is the model used by CalEEMod for offroad equipment emission factors.

On-Road Mobile Sources

Vehicle trips generated by construction workers to commute to the construction site, diesel-fueled delivery trucks bringing construction materials to the project site, dump trucks, and concrete trucks also emit NOx, ROG, PM_{10}, and $PM_{2.5}$. On-road mobile sources include vehicle trips associated with construction workers, vendors, haul trucks, and concrete trucks. The EMFAC2021 on-road emissions model was used to quantify on-road construction criteria air pollutant and TAC emissions from these activities.

PM emissions can occur from resuspended road dust that is entrained by vehicular travel on paved roads. These PM emissions were included in the total construction emissions from the Project. Entrained roadway dust emission factor and the calculation of emissions from entrained roadway dust for the Project were calculated using default trip lengths outside of CalEEMod using CARB entrained road dust emission factors.

Fugitive Construction Dust

PM emissions can also occur from ground-disturbing activities during construction and were calculated using factors consistent with CalEEMod, based on the amount of excavation and grading associated with the Project.

Architectural Coatings and Paving

Architectural coating and paving are the predominant sources of ROG emissions during construction. These emissions result from the use of coatings and solvents and off-gassing during paving. Emissions from architectural coatings were based on CalEEMod default values of architectural coatings per square footage, default ROG content, which is 100 grams per liter of coating for indoors and 150 grams per liter for outdoors and using the total building square footage provided by the project applicant. Emissions from architectural coating would be compliant with air district paint ROG regulations. Paving emissions were also based on the CalEEMod default emission rate, which is 2.62 pounds per acre paved, and using the square footage of paved area.

Operational Activities and Emissions

Development of the hotel at the project site would generate operational emissions over the lifetime of the project.

Sources of operational emissions from the proposed project include:

- on-road vehicles generated by employees and guests at the hotel;
- landscaping and maintenance of open space areas;
- consumer use of products containing VOCs (paints, solvents, personal care products); and
- architectural coating (interior and exterior).

Operational On-Road Mobile Sources

On-road mobile sources include vehicle trips associated with hotel guests, employees, and vendor deliveries. Vehicles on the roadway emit criteria pollutants and TACs in their exhaust, resuspended road dust, tire wear, and brake wear. In addition, gasoline vehicles emit criteria air pollutants and TACs through fuel evaporation. Operational vehicle emissions for the Project were estimated based on trip rates from the transportation analysis. Emissions were calculated with CalEEMod, and model defaults were used for trip distances and vehicle fleet mix for Napa County. Emission factors were conservatively assumed for the first year of operation of the Project. This is a conservative assumption because emissions tend to decrease over time, with advancements in fuel economy and new regulations.

Energy Use

Criteria pollutant emissions are generated from energy use associated with buildings associated with space and water heating. Electricity and natural gas use are the most common energy types

used for building energy. Therefore, there would be no direct emissions of criteria air pollutants associated with on-site building energy use.

Emissions from natural gas combustion in existing buildings were calculated using CalEEMod default energy consumption profiles for the Project land uses.

Architectural Coatings

Operational architectural coatings account for the reapplication of paint and coatings on interior and exterior surfaces, which would result in ROG emissions. Architectural coating emissions were estimated using CalEEMod and were based on the total building square footage of the Project.

Consumer Products

Consumer product use would be the predominant source of ROG emissions during Project operation. Consumer product emissions come from various non-industrial solvents, including cleaning supplies, cosmetics and toiletries, which emit VOCs during their use. Emissions from consumer products were calculated in CalEEMod using the total building square footage of Project buildings.

Landscaping Equipment

Emissions from landscaping and maintenance of the open space areas were calculated using CalEEMod and based on information regarding the size of the open space area. As a conservative measure, the recent law (Assembly Bill 1346) banning the sale of gasoline-powered landscaping equipment by 2024 was not accounted for, since it is unknown how the law will affect emissions due to non-electric equipment already in operation.

Detailed calculation worksheets used for the estimation of construction emissions and CalEEMod output used for the estimation of operational emissions are included in Attachment A.

2.1.2 Toxic Air Contaminants

The analysis presented below also evaluates health risks and hazards that would result from the construction of the Project using guidelines and methods from air quality agencies, specifically, BAAQMD, the California Air Resources Board (CARB), and the Office of Environmental Health Hazard Assessment (OEHHA). Consistent with the requirements of these agencies, the health risk assessment (HRA) evaluates the estimated incremental increase in cancer risk and the chronic hazard index for DPM, and the annual average $PM_{2.5}$ concentrations.

The potential for the Project to expose sensitive receptors to substantial pollutant concentrations of TACs is associated mainly with construction activities, which involve diesel combustion in construction equipment and heavy-duty trucks generating DPM. The Project would not include any operational sources of TACs. DPM is considered as a TAC by CARB with cancer and chronic non-cancer risks from exposure. $PM_{2.5}$ from exhaust and fugitive dust is also regulated by the BAAQMD as a TAC due to its health impacts. As discussed earlier, sensitive receptors are located in the vicinity of the Project site including single family residences located adjacent to the southern parcel. Consistent with BAAQMD guidance, the analysis evaluates health risks to

residential sensitive receptors in the Project vicinity as well as worker receptors at the existing winery. There are no schools, daycares or hospitals within 1,000 feet of the Project site.

A construction HRA was conducted for the Project to evaluate the health risk impacts of TAC emissions generated by the Project. The TACs included in the HRA were limited DPM and $PM_{2.5}$ exhaust emissions from heavy construction equipment and trucks. Emissions of PM_{10} exhaust are used as a surrogate for DPM emissions.[4]

The HRA was conducted using the U.S. EPA AERMOD dispersion model (version 23132) and meteorological data from the Sonoma County Airport to predict conservative concentrations at specific locations defined by a discrete Cartesian system. A conservative representation of the on-site construction equipment operating at the Project site was modeled as two polygon area sources representing the northern and southern parcels of the Project site. Fugitive dust emissions were also modeled as two area sources over the two parcels. The construction truck route along SR 29 was modeled as a line-volume source. The modeling parameters are as follows:

Two polygon area sources over the northern and southern Project parcels representing operation of construction equipment with;

- Release height of 5 meters for construction equipment exhaust;
- Initial vertical dimension of 1.5 meters; and
- Construction emissions occurring only between the hours of 7:00 a.m. and 7:00 p.m.;

Two polygon area sources over the northern and southern Project parcels representing fugitive dust emissions with;

- Ground level release height of 0 meters;
- Initial vertical dimension of 1 meters; and
- Construction emissions occurring only between the hours of 7:00 a.m. and 7:00 p.m.;

A line-volume source representing the haul truck route along San Tomas Expressway and Williams Road, with:

- Release height of 3.4 meters for haul truck exhaust;
- Plume height of 6.8 meters;
- Plume width of 9.0 meters;
- Construction emissions occurring only between the hours of 7:00 a.m. and 7:00 p.m.;

Receptor flagpole height of 1.5 meters (ground-level receptor at breathing height).

[4] OEHHA guidance indicates that the cancer potency factor to be used to evaluate cancer risks were developed based on whole (gas and particulate matter) diesel exhaust, and that the surrogate for whole diesel exhaust is DPM, with PM_{10} serving as the basis for the potential risk calculations.

All sources were modeled with an emission rate of one gram per second to obtain a dispersion factor (unit concentration) at each receptor location. The DPM and $PM_{2.5}$ concentrations were calculated using the dispersion factors and the PM_{10} and $PM_{2.5}$ emissions from the modeling outputs.

Lifetime excess cancer risk and non-cancer chronic hazard index were calculated using the resulting DPM concentrations along with equations and factors from the OEHHA 2015 Risk Assessment Guidelines[5] and Appendix E of the 2023 BAAQMD CEQA Guidelines).[6] Estimated health risks were compared to the BAAQMD's significance thresholds shown in **Table 3**.

TABLE 3
BAAQMD LOCAL COMMUNITY RISK AND HAZARD IMPACTS – THRESHOLDS OF SIGNIFICANCE

	Incremental Cancer Risk (# in 1 million)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)	Chronic Hazard Index (unitless)
BAAQMD Project-Level Threshold	10	0.3	1.0
BAAQMD Cumulative Threshold	100	0.8	10.0

Note: µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns

SOURCE: BAAQMD, *2022 CEQA Guidelines*. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3. April 2023. Accessed June 2024.

Potential cumulative health risks were analyzed considering health risks from the Project in combination with health risks and TACs from BAAQMD-permitted stationary sources and mobile sources (freeway, major streets and rail) within 1,000 feet of the Project site. Health risk data from BAAQMD-permitted stationary sources and background mobile source risks from on-road and rail sources were derived from the health risk screening and modeling tools available on the BAAQMD website. Combined health risks are compared to the BAAQMD's thresholds of significance for cumulative impacts shown in Table 3.

Modeling outputs, equations, and the health risk calculations are included in Attachment B.

2.1.3 Greenhouse Gases

GHG emissions would be generated from both construction and operational activities. Operation of construction of construction equipment and vehicles would generate CO_2, CH_4 and N_2O. In addition, direct GHG emissions would be generated from operational vehicle trips and area sources such as use of landscaping equipment. In addition, indirect GHG emissions would be generated from electricity used by the Project for lighting, space and water heating as well as for

5 OEHHA, *Air Toxics Hot Spots Program: Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available at: oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0. Accessed July 2024.

6 BAAQMD, *2022 CEQA Air Quality Guidelines*. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3. April 2023. Accessed June 2024.

the pumping and distribution of water used by the Project. Wastewater and solid waste generated by the Project would also generate GHG emissions from transport, treatment and disposal.

The approach to the analysis of criteria air pollutants described above also yielded GHG emissions. GHG emissions from electricity use, waster, wastewater and solid waste were estimated sing CalEEMod and the default GHG emission factor for PG&E, the electricity provider to the Project site.

CHAPTER 3
Results

3.1 Project Construction

3.1.1 Criteria Air Pollutants

Table 4 presents the estimated criteria air pollutant emissions generated by the Project for each year of construction. Consistent with BAAQMD guidance, the table compares only exhaust PM_{10} and $PM_{2.5}$ emissions from construction to the BAAQMD thresholds. As shown in Table 4, emissions of all analyzed criteria air pollutants during all construction years would be well below the BAAQMD construction thresholds.

TABLE 4
AVERAGE DAILY CRITERIA POLLUTANT EMISSIONS FROM PROJECT CONSTRUCTION

Construction Year[a]	Average Daily Emissions (pounds per day)[a]			
	ROG	NOx	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2024	0.78	7.52	0.24	0.22
2025	0.57	5.66	0.12	0.11
2026	0.55	5.47	0.11	0.11
2027	10.01	3.96	0.08	0.08
Project Average[b]	*1.60*	*5.91*	*0.14*	*0.13*
BAAQMD Threshold	*54*	*54*	*82*	*54*
Exceed Threshold?	No	No	No	No

NOTES:
For each calendar construction year, annual emissions are divided over the number of construction workdays in the given year to determine the average daily emissions.
[a] Calendar year of construction. Project construction would occur during a portion of Construction Years 1 and 4.
[b] The Project Average is the total emissions generated over the duration of construction divided by the total number of construction workdays and is not the sum of the averages for the individual construction years.

SOURCE: Table compiled by ESA in 2024 based on Attachment A.

In addition to exhaust emissions, emissions of fugitive dust would also be generated by construction activities associated with grading and earth disturbance, travel on paved and unpaved roads, etc. With regard to fugitive dust emissions, the BAAQMD Guidelines focus on implementation of recommended dust control measures rather than a quantitative comparison of estimated emissions to a significance threshold. For all projects, the BAAQMD recommends the implementation of its Basic Best Management Practices (BMPs) for Construction-Related

Fugitive Dust Emissions[7]. These BMPs would be implemented as Mitigation Measures AQ-1 to reduce emissions of fugitive dust.

Mitigation Measure AQ-1

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

3.1.2 Toxic Air Contaminants and Health Risks

As discussed earlier, the Project would expose sensitive and worker receptors in the vicinity to DPM and $PM_{2.5}$ emissions generated during construction. The results of the construction HRA at the Maximally Exposed Individual Resident (MEIR) and Maximally Exposed Individual Worker (MEIW) are shown in **Table 5**.

[7] BAAMQD, Project Level Air Quality Impacts – Section 5.2.2 Construction-Related Criteria Air Pollutant Emissions. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-5-project-air-quality-impacts_final-pdf.pdf?rev=de582fe349e545989239cbbc0d62c37a&sc_lang=en. Accessed August 2024.

TABLE 5
UNMITIGATED HEALTH RISKS FROM PROJECT CONSTRUCTION

Receptor Type	Incremental Cancer Risk (# in one million)	Chronic Hazard Index (unitless)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)
MEIR – Resident Infant Receptor[a]	6.6	0.007	0.05
MEIW – Worker Receptor[b]	0.7	0.052	0.24
BAAQMD Threshold	10.0	1.0	0.3
Exceeds Threshold?	No	No	No

NOTES:
[a] The resident infant MEIR for incremental cancer risk, chronic HI, and annual average $PM_{2.5}$ concentration is located at 1179 Lodi Lane adjacent to the South Parcel hotel development. Exposure is assumed to begin in the third trimester of an unborn child.

[b] The MEIW for incremental cancer risk, HI and annual average $PM_{2.5}$ concentration is located on site at the Office Building adjacent to the North Parcel hotel development.

SOURCE: Table compiled by ESA in 2024 based on Attachment B.

As shown, the unmitigated incremental cancer risk, chronic Hazard Index, and annual average $PM_{2.5}$ concentration at the MEIR would not exceed the BAAQMD's project-level threshold of 10 in one million, 1.0 and 0.3 $\mu g/m^3$, respectively. All health risks at the MEIW would also be less than the BAAQMD thresholds.

3.1.3 Greenhouse Gases

Direct GHG emissions would be generated during construction and would include emissions from the combustion of fuel (e.g., gasoline and diesel) in construction equipment and vehicles. **Table 6** summarizes the GHG emissions by construction year for the Project.

TABLE 6
PROJECT CONSTRUCTION GHG EMISSIONS

Construction Year	GHG Emissions (metric tons of CO_2e per year)
2024	308
2025	369
2026	365
2027	84
Project Total	1,126

SOURCE: Table compiled by ESA in 2024 based on Attachment A.

The BAAQMD does not provide quantitative thresholds for the evaluation of construction GHG emissions. Therefore, emissions presented in Table 6 are for informational purposes.

3.2 Project Operation

3.2.1 Criteria Air Pollutants

Criteria pollutant emissions generated by the operation of the Project have been estimated for 2028, the first operational year for the Project and are presented in **Table 8**.

Mobile emissions include emissions from motor vehicle trips generated by the Project's operation. Operational traffic would include daily vehicle trips generated by employees and hotel guests and was derived from the Project's Transportation Impact Study. Area sources include landscaping equipment and off-gassing associated with reapplication of architectural coatings as part of building maintenance during operations. Natural gas combustion for space and water heating in Project buildings would also generate criteria air pollutants. Each of these sources were considered in calculating the Project's long-term operational emissions.

As shown in Table 8, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$, would all be below their respective daily and annual operational BAAQMD significance thresholds.

TABLE 8
AVERAGE DAILY AND ANNUAL CRITERIA POLLUTANT EMISSIONS FROM PROJECT OPERATION

	Average Daily Emissions (pounds per day)				Annual Emissions (tons per year)			
Emissions Source	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Mobile	2.63	3.4	5.37	1.42	0.48	0.62	0.98	0.26
Area	2.25	0.03	0.03	0.03	0.41	0.01	<0.005	<0.005
Energy	0.05	0.6	0.05	0.05	0.01	0.11	0.01	0.01
Total[b]	4.93	4.0	5.42	1.42	0.9	0.73	0.99	0.26
BAAQMD Threshold	54	54	82	54	10	10	15	10
Exceed Threshold?	No	No	No	No	No	No	No	No

NOTES:
[a] Average daily emissions are calculated by dividing annual emissions by 365 days per year.
[b] Emissions may not exactly add up to the totals presented due to rounding.

SOURCE: Table compiled by ESA in 2024 based on Attachment A.

3.2.2 Toxic Air Contaminants

The Project would not include any operational sources of TACs. Motor vehicle trips associated with employees and hotel guests would be primarily gasoline powered and are not a significant source of health risks. There would be a minimal number of delivery truck trips that would be diesel powered, but the associated health risks are anticipated to be minimal and well below the BAAQMD health risk thresholds.

3.2.3 Greenhouse Gases

Table 9 presents the annual operational GHG emissions for the Project for the first operational year of 2028. Upon completion of construction, direct GHG emissions would be generated from natural gas combustion for building energy use, area sources (such as landscaping equipment, maintenance-related architectural coatings, and use of consumer products) and on-road motor vehicle trips generated by the Project that would include both passenger vehicle trips from employees and hotel guests as well as heavy-duty delivery truck trips.

TABLE 9
PROJECT OPERATIONAL GHG EMISSIONS: YEAR 2028

Operational Emission Source	CO_2e Emissions (metric tons year)
Mobile Sources[a]	1,008.4
Building Energy Use – Natural Gas & Electricity	176.1
Area Sources	1.5
Water and Wastewater	4.3
Solid Waste	13.5
Refrigerants	20.3
PROJECT TOTAL	1,224

NOTE:

a. Emissions estimated based on number of trips and VMT generated by the Project using trip generation numbers provided by the traffic consultant and default trip lengths in CalEEMod.

SOURCE: Table compiled by ESA in 2024 based on Attachment A.

Indirect operational GHG emissions would be generated from electricity use associated with building energy use along with water and wastewater treatment and conveyance and disposal of solid waste generated. The emissions estimates associated with electricity use presented in Table 9 conservatively assume current GHG intensity rates for PG&E electricity for 2028. In reality, compliance with SB 100 would require PG&E to progressively move towards more renewable and lower carbon energy sources with the ultimate goal of reaching zero carbon electricity by 2045. Therefore, GHG intensity rates for PG&E electricity in 2028 would be lower than those used to estimate the emissions presented in Table 9.

The emissions inventory in Table 9 is provided for informational purposes only and is not used in the evaluation of significance of impacts as the BAAQMD does not provide mass emissions thresholds for GHG.

3.3 Cumulative Health Risk

Table 10 shows that the Project's health risk in conjunction with other permitted stationary sources within 1,000 feet of the MEIR and background health risks from mobile sources on highways, major streets and rail would result in cumulative lifetime cancer risk, chronic hazard

index and annual average $PM_{2.5}$ concentration below the BAAQMD's cumulative thresholds, which are 100 in a million for incremental lifetime cancer risk, 10.0 for non-cancer Hazard Index (acute or chronic), and 0.8 $\mu g/m^3$for average annual concentration.

TABLE 10
SUMMARY OF CUMULATIVE EXCESS LIFETIME CANCER RISK, NON-CANCER CHRONIC RISK, AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATION AT THE PROJECT MEIR

Emissions Source	Excess Lifetime Cancer Risk (per million)	Non-Cancer Chronic Hazard Index (unitless)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)[a]
Project Construction[a]	6.64	0.007	0.054
Background Cumulative Contributions from Sources within 1,000 feet of MEIR			
BAAQMD Permitted Stationary Sources[b]	7.52	0.002	0.010
Roadways, Highways and Major Streets[c]	5.59	0.014	0.054
Rail[e]	--	--	--
Total Background Cumulative	*13.1*	*0.016*	*0.119*
Project Plus Cumulative			
Cumulative Total	19.8	0.02	0.17
Cumulative Significance Thresholds	100	10.0	0.8
Significant?	No	No	No

NOTES:

$PM_{2.5}$ = particulate matter that is 2.5 microns or less in diameter; = $\mu g/m^3$ micrograms per cubic meter; MEIR = maximally exposed individual receptor

a. For onsite construction, $PM_{2.5}$ concentrations include exhaust and fugitive dust emissions as required by the most recent BAAQMD Guidelines.
b. Health risks from BAAQMD permitted stationary sources available through the BAAQMD's Stationary Source Screening Map.
c. Background health risks from mobile sources derived from BAAQMD's Mobile Source Screening Map.

SOURCE: Table compiled by ESA in 2024 based on Attachment B.

Attachment A
Air Quality & Greenhouse Gas Estimation Worksheets and CalEEMod Outputs

Inn at the Abbey Project
Construction Criteria Air Pollutant Estimates

Inn at the Abbey - EMISSIONS SUMMARIES

Unmitigated Construction Emissions - Criteria Air Pollutants

Year	Number of Workdays	Tons per year				Average Pounds per day			
		ROG	NOx	Ex PM-10	Ex PM-2.5	ROG	NOx	Ex PM-10	Ex PM-2.5
2024	218	0.09	0.82	0.03	0.02	0.78	7.52	0.24	0.22
2025	261	0.07	0.74	0.02	0.01	0.57	5.66	0.12	0.11
2026	261	0.07	0.71	0.01	0.01	0.55	5.47	0.11	0.11
2027	86	0.43	0.17	0.00	0.00	10.01	3.96	0.08	0.08
Project Average	826	0.66	2.44	0.06	0.06	1.60	5.91	0.14	0.13
BAAQMD Thresholds	--	--	--	--	--	54	54	82	54

Construction Emissions - Greenhouse Gases

Year	MT per year			
	CO_2	CH_4	N_2O	CO_2e
2024	298.20	0.01	0.03	307.71
2025	356.55	0.01	0.04	369.25
2026	352.19	0.01	0.04	364.70
2027	81.28	0.00	0.01	84.14
Project Total	1088.21	0.02	0.12	1125.80

Unmitigated Operational Emissions - Criteria Air Pollutants (from CalEEMod)

Source	Tons per year				Pounds per day			
	ROG	NOx	Tot PM_{10}	Tot $PM_{2.5}$	ROG	NOx	Tot PM_{10}	Tot $PM_{2.5}$
Mobile	0.48	0.62	0.98	0.26	2.63	3.40	5.37	1.42
Area	0.41	0.01	0.01	0.01	2.25	0.03	0.03	0.03
Energy	0.01	0.11	0.01	0.01	0.05	0.60	0.05	0.05
Project Total	0.90	0.73	0.99	0.26	4.93	4.00	5.42	1.42
BAAQMD Thresholds	10	10	15	10	54	54	82	54

Operational Emissions - Greenhouse Gases (Unmitigated)

Year	MT per year			
	CO_2	CH_4	N_2O	CO_2e
Mobile	990.95	0.04	0.05	1008.42
Area	1.46	0.00006	0.00001	1.47
Energy (Natural Gas & Electricity)	175.20	0.02	0.001	176.07
Water	2.23	0.07	0.002	4.34
Solid Waste	3.86	0.39	0.00	13.50
Refrigerants	--	--	--	20.32
Project Total	1173.70	0.51	0.05	1224.12

Inn at the Abbey- Construction Data

Operation

1. Please provide the number and size of any emergency backup generators.
2. Please provide expected number and size of solar panels to be provided.
3. Confirm no changes to Napa County Voluntary Best Management Practice Checklist for Development Projects previously submitted.

Project Data

Project location: Unincorporated Napa County

Data available. Please confirm.	Data Needed	ESA to calculate	
Proposed Land Uses	**Area**	**Units**	**Service Population**
Hotel	79	rooms	103 (48 new)
Parking (underground structure)	54	spaces	
Surface parking	149	spaces	

Project Site Area	0.92	acres	
Area to be demolished	10,050	sqft	demolish 3 structures
Paved & concrete area to be removed		sqft	
Total Demo Volume (off-haul)		tons	
Total Proposed new building area	78,500	sqft	
Volume of infill to be brought in		cubic yards	
Volume of material to be exported		cubic yards	
New paved area		sqft	
New landscaped area	79,300	sqft	
Trees removed	97	73 on North parcel and 24 on South parcel	

Construction schedule

Start date of construction	6/1/2024
First year of operation	6/1/2027

Construction Phase	From	To	# of days
Demolition	3/1/2024	5/1/2024	44
Site Preparation	4/1/2024	8/1/2024	89
Grading	6/1/2024	8/1/2024	44
Building Construction	8/1/2024	2/28/2027	672
Paving	2/28/2027	3/30/2027	22
Architectural Coating	3/30/2027	4/30/2027	24
Total Workdays			826

Construction Equipment

Equipment	Number	No. of Days used	Hrs/day used
Demolition			
Excavators	1	44	4
Dumpers/Tenders	3	44	3
Skid Steer Loaders	2	44	4
Tractors/Loaders/Backhoes	1	44	4
Site Preparation			
Excavators	1	80	4
Dumpers/Tenders	3	70	3
Skid Steer Loaders	2	75	4
Sweepers/Scrubbers	1	80	4
Trenchers	1	70	4
Other Construction Equipment	2	89	4
Grading			
Excavators	1	35	4
Graders	1	40	4
Rollers	1	40	4
Other Construction Equipment	1	44	4
Sweepers/Scrubbers	1	40	4
Building Construction			
Bore/Drill Rigs	1	30	6
Cranes	1	300	6
Dumpers/Tenders	1	672	1
Forklifts	1	300	5
Generator Sets	1	100	8.0
Other Construction Equipment	2	100	4
Plate Compactors	1	30	8
Paving			
Dumpers/Tenders	1	20	4
Paving Equipment	1	22	6
Rollers	1	20	4
Architectural Coating			
Concrete/Industrial Saws	1	10	6
Cement and Mortar Mixers	1	15	4
Forklifts	1	20	4
Pressure Washers	1	15	2

Construction Vehicle Trips

Construction Phase	One-way worker trips/day	One-way vendor truck trips/day	Hauling truck trips/day	One-way hauling truck trips/phase	One way Hauling Truck Trips/Day
Demolition	20	10	3	264	6
Site Preparation	16	8	2	356	4
Grading	16	8	2	176	4
Building Construction	50	26	1	1344	2
Paving	10	6	1	44	2
Architectural Coating	24	12	2	96	4

CONSTRUCTION OFFROAD EMISSIONS - UNMITIGATED

Offroad Emissions Summary by Construction Year - For Comparision with BAAQMD Thresholds

Construction Year	CAP Emissions (tons/yr)				GHG Emissions (MT/yr)				No. of	CAP Emissions (pounds/day)			
	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e	Workdays	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$
2024	0.05	0.46	0.02	0.02	78.1	0.0	0.0	78.3	218	0.5	4.2	0.2	0.2
2025	0.03	0.25	0.01	0.01	54.4	0.0	0.0	54.6	261	0.2	1.9	0.1	0.1
2026	0.03	0.24	0.01	0.01	54.4	0.0	0.0	54.5	261	0.2	1.8	0.1	0.1
2027	0.01	0.06	0.00	0.00	13.5	0.0	0.0	13.5	86	0.2	1.4	0.1	0.1
PROJECT TOTAL	0.11	1.01	0.05	0.04	200.3	0.0	0.0	200.9	826	0.3	2.4	0.1	0.1

Construction Phase	Equipment	Fuel	Number	No. of Days used	Hrs/day used	Total hrs used/year	Construction Year	Hp	LF	OFFROAD Emission Factors (g/hp-hr)							CAP Emissions (tons/yr)				GHG Emissions (MT/yr)			
										ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	CO_2	CH_4	N_2O	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Demolition	Excavators	Diesel	1	44	4	176	2024	36	0.38	0.415	3.501	0.119	0.11	587.317	0.024	0.005	0.001	0.009	0.000	0.000	1.41	0.000	0.000	1.42
Demolition	Dumpers/Tenders	Diesel	3	44	3	396	2024	16	0.38	0.571	4.368	0.163	0.15	573.018	0.023	0.005	0.002	0.012	0.000	0.000	1.38	0.000	0.000	1.38
Demolition	Skid Steer Loaders	Diesel	2	44	4	352	2024	71	0.37	0.142	1.918	0.059	0.054	528.17	0.021	0.004	0.001	0.020	0.001	0.001	4.88	0.000	0.000	4.90
Demolition	Tractors/Loaders/Backhoes	Diesel	1	44	4	176	2024	84	0.37	0.215	2.192	0.097	0.089	529.933	0.021	0.004	0.001	0.013	0.001	0.001	2.90	0.000	0.000	2.91
Site Preparation	Excavators	Diesel	1	80	4	320	2024	36	0.38	0.415	3.501	0.119	0.11	587.317	0.024	0.005	0.002	0.017	0.001	0.001	2.57	0.000	0.000	2.58
Site Preparation	Dumpers/Tenders	Diesel	3	70	3	630	2024	16	0.38	0.571	4.368	0.163	0.15	573.018	0.023	0.005	0.002	0.018	0.001	0.001	2.19	0.000	0.000	2.20
Site Preparation	Skid Steer Loaders	Diesel	2	75	4	600	2024	71	0.37	0.142	1.918	0.059	0.054	528.17	0.021	0.004	0.002	0.033	0.001	0.001	8.33	0.000	0.000	8.35
Site Preparation	Sweepers/Scrubbers	Diesel	1	80	4	320	2024	36	0.46	0.745	4.075	0.238	0.219	587.008	0.024	0.005	0.004	0.024	0.001	0.001	3.11	0.000	0.000	3.12
Site Preparation	Trenchers	Diesel	1	70	4	280	2024	40	0.5	0.599	3.824	0.196	0.18	587.904	0.024	0.005	0.004	0.024	0.001	0.001	3.29	0.000	0.000	3.30
Site Preparation	Other Construction Equipment	Diesel	2	89	4	712	2024	82	0.42	0.343	3.241	0.209	0.192	528.454	0.021	0.004	0.009	0.088	0.006	0.005	12.96	0.001	0.000	13.00
Grading	Excavators	Diesel	1	35	4	140	2024	36	0.38	0.415	3.501	0.119	0.11	587.317	0.024	0.005	0.001	0.007	0.000	0.000	1.12	0.000	0.000	1.13
Grading	Graders	Diesel	1	40	4	160	2024	148	0.41	0.361	3.176	0.175	0.161	530.17	0.022	0.004	0.004	0.034	0.002	0.002	5.15	0.000	0.000	5.16
Grading	Rollers	Diesel	1	40	4	160	2024	36	0.38	0.618	3.814	0.192	0.177	586.798	0.024	0.005	0.001	0.009	0.000	0.000	1.28	0.000	0.000	1.29
Grading	Other Construction Equipment	Diesel	1	44	4	176	2024	82	0.42	0.343	3.241	0.209	0.192	528.454	0.021	0.004	0.002	0.022	0.001	0.001	3.20	0.000	0.000	3.21
Grading	Sweepers/Scrubbers	Diesel	1	40	4	160	2024	36	0.46	0.745	4.075	0.238	0.219	587.008	0.024	0.005	0.002	0.012	0.001	0.001	1.56	0.000	0.000	1.56
Building Construction	Bore/Drill Rigs	Diesel	1	30	6	29	2024	83	0.5	0.165	1.952	0.072	0.067	521.434	0.021	0.004	0.000	0.003	0.000	0.000	0.63	0.000	0.000	0.63
Building Construction	Cranes	Diesel	1	300	6	292	2024	367	0.29	0.21	2.131	0.086	0.079	527.532	0.021	0.004	0.007	0.073	0.003	0.003	16.39	0.001	0.000	16.45
Building Construction	Dumpers/Tenders	Diesel	1	672	1	109	2024	16	0.38	0.571	4.368	0.163	0.15	573.018	0.023	0.005	0.000	0.003	0.000	0.000	0.38	0.000	0.000	0.38
Building Construction	Forklifts	Diesel	1	300	5	243	2024	82	0.2	0.292	2.751	0.157	0.145	527.04	0.021	0.004	0.001	0.012	0.001	0.001	2.10	0.000	0.000	2.11
Building Construction	Generator Sets	Diesel	1	100	8.0	130	2024	14	0.74	0.546	4.373	0.18	0.166	568.315	0.023	0.005	0.001	0.006	0.000	0.000	0.76	0.000	0.000	0.77
Building Construction	Other Construction Equipment	Diesel	2	100	4	130	2024	82	0.42	0.343	3.241	0.209	0.192	528.454	0.021	0.004	0.002	0.016	0.001	0.001	2.36	0.000	0.000	2.37
Building Construction	Plate Compactors	Diesel	1	30	8	39	2024	8	0.43	0.547	4.143	0.162	0.149	568.353	0.023	0.005	0.000	0.001	0.000	0.000	0.08	0.000	0.000	0.08
Building Construction	Bore/Drill Rigs	Diesel	1	30	6	70	2025	83	0.5	0.142	1.745	0.051	0.047	522.567	0.021	0.004	0.000	0.006	0.000	0.000	1.52	0.000	0.000	1.52
Building Construction	Cranes	Diesel	1	300	6	699	2025	367	0.29	0.201	1.95	0.079	0.073	527.585	0.021	0.004	0.016	0.160	0.006	0.006	39.26	0.002	0.000	39.38
Building Construction	Dumpers/Tenders	Diesel	1	672	1	261	2025	16	0.38	0.571	4.367	0.163	0.15	572.88	0.023	0.005	0.001	0.008	0.000	0.000	0.91	0.000	0.000	0.91
Building Construction	Forklifts	Diesel	1	300	5	583	2025	82	0.2	0.269	2.551	0.135	0.124	527.108	0.021	0.004	0.003	0.027	0.001	0.001	5.04	0.000	0.000	5.05
Building Construction	Generator Sets	Diesel	1	100	8.0	311	2025	14	0.74	0.542	4.347	0.177	0.163	568.322	0.023	0.005	0.002	0.015	0.001	0.001	1.83	0.000	0.000	1.84
Building Construction	Other Construction Equipment	Diesel	2	100	4	311	2025	82	0.42	0.298	2.891	0.172	0.159	527.743	0.021	0.004	0.004	0.034	0.002	0.002	5.65	0.000	0.000	5.67
Building Construction	Plate Compactors	Diesel	1	30	8	93	2025	8	0.43	0.547	4.144	0.162	0.149	568.406	0.023	0.005	0.000	0.001	0.000	0.000	0.18	0.000	0.000	0.18
Building Construction	Bore/Drill Rigs	Diesel	1	30	6	70	2026	83	0.5	0.128	1.639	0.04	0.037	525.082	0.021	0.004	0.000	0.005	0.000	0.000	1.52	0.000	0.000	1.53
Building Construction	Cranes	Diesel	1	300	6	699	2026	367	0.29	0.198	1.837	0.075	0.069	527.461	0.021	0.004	0.016	0.151	0.006	0.006	39.25	0.002	0.000	39.37
Building Construction	Dumpers/Tenders	Diesel	1	672	1	261	2026	16	0.38	0.57	4.358	0.163	0.15	571.605	0.023	0.005	0.001	0.008	0.000	0.000	0.91	0.000	0.000	0.91
Building Construction	Forklifts	Diesel	1	300	5	583	2026	82	0.2	0.246	2.342	0.112	0.103	527.097	0.021	0.004	0.003	0.025	0.001	0.001	5.04	0.000	0.000	5.05
Building Construction	Generator Sets	Diesel	1	100	8.0	311	2026	14	0.74	0.539	4.324	0.174	0.16	568.327	0.023	0.005	0.002	0.015	0.001	0.001	1.83	0.000	0.000	1.84
Building Construction	Other Construction Equipment	Diesel	2	100	4	311	2026	82	0.42	0.282	2.734	0.158	0.145	527.541	0.021	0.004	0.003	0.032	0.002	0.002	5.65	0.000	0.000	5.66
Building Construction	Plate Compactors	Diesel	1	30	8	93	2026	8	0.43	0.547	4.143	0.162	0.149	568.337	0.023	0.005	0.000	0.001	0.000	0.000	0.18	0.000	0.000	0.18
Building Construction	Bore/Drill Rigs	Diesel	1	30	6	11	2027	83	0.5	0.129	1.589	0.035	0.033	523.974	0.021	0.004	0.000	0.001	0.000	0.000	0.24	0.000	0.000	0.24
Building Construction	Cranes	Diesel	1	300	6	110	2027	367	0.29	0.195	1.748	0.072	0.066	527.455	0.021	0.004	0.003	0.023	0.001	0.001	6.17	0.000	0.000	6.19
Building Construction	Dumpers/Tenders	Diesel	1	672	1	41	2027	16	0.38	0.57	4.361	0.163	0.15	572.007	0.023	0.005	0.000	0.001	0.000	0.000	0.14	0.000	0.000	0.14
Building Construction	Forklifts	Diesel	1	300	5	92	2027	82	0.2	0.228	2.152	0.092	0.085	527.07	0.021	0.004	0.000	0.004	0.000	0.000	0.79	0.000	0.000	0.79
Building Construction	Generator Sets	Diesel	1	100	8.0	49	2027	14	0.74	0.537	4.305	0.172	0.158	568.306	0.023	0.005	0.000	0.002	0.000	0.000	0.29	0.000	0.000	0.29
Building Construction	Other Construction Equipment	Diesel	2	100	4	49	2027	82	0.42	0.252	2.5	0.132	0.122	527.442	0.021	0.004	0.000	0.005	0.000	0.000	0.89	0.000	0.000	0.89
Building Construction	Plate Compactors	Diesel	1	30	8	15	2027	8	0.43	0.547	4.143	0.162	0.149	568.318	0.023	0.005	0.000	0.000	0.000	0.000	0.03	0.000	0.000	0.03
Paving	Dumpers/Tenders	Diesel	1	20	4	80	2027	16	0.38	0.57	4.361	0.163	0.15	572.007	0.023	0.005	0.000	0.002	0.000	0.000	0.28	0.000	0.000	0.28
Paving	Paving Equipment	Diesel	1	22	6	132	2027	89	0.36	0.183	2.016	0.075	0.069	528.068	0.021	0.004	0.001	0.009	0.000	0.000	2.23	0.000	0.000	2.24
Paving	Rollers	Diesel	1	20	4	80	2027	36	0.38	0.529	3.577	0.146	0.134	587.122	0.024	0.005	0.001	0.004	0.000	0.000	0.64	0.000	0.000	0.64
Architectural Coating	Concrete/Industrial Saws	Diesel	1	10	6	60	2027	33	0.73	0.39	3.43	0.071	0.065	574.332	0.023	0.005	0.001	0.005	0.000	0.000	0.83	0.000	0.000	0.83
Architectural Coating	Cement and Mortar Mixers	Diesel	1	15	4	60	2027	10	0.56	0.553	4.198	0.163	0.15	570.32	0.023	0.005	0.000	0.002	0.000	0.000	0.19	0.000	0.000	0.19
Architectural Coating	Forklifts	Diesel	1	20	4	80	2027	82	0.2	0.228	2.152	0.092	0.085	527.07	0.021	0.004	0.000	0.003	0.000	0.000	0.69	0.000	0.000	0.69
Architectural Coating	Pressure Washers	Diesel	1	15	2	30	2027	14	0.3	0.524	4.331	0.175	0.161	578.37	0.023	0.005	0.000	0.001	0.000	0.000	0.07	0.000	0.000	0.07

CONSTRUCTION ONROAD EMISSIONS

1 ton =	907185 g	1 MT =	1000000 g
		1 ton =	2000 pounds

GHG	CO2	CH4	N2O
GWP	1	25	298

Onroad Emissions Summary

Construction Year	CAP Emissions (tons/year)								GHG Emissions (MT/year)				No. of Workdays	CAP Emissions (pounds/day)			
	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	Fug PM_{10}	Fug $PM_{2.5}$	Tot PM_{10}	Tot $PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e		ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$
2024	0.033	0.364	0.003	0.003	0.053	0.014	0.056	0.018	220.1	0.002	0.031	229.4	218	0.3	3.3	0.0	0.0
2025	0.048	0.488	0.005	0.004	0.076	0.020	0.080	0.025	302.2	0.003	0.042	314.7	261	0.4	3.7	0.0	0.0
2026	0.046	0.476	0.005	0.004	0.076	0.020	0.080	0.025	297.8	0.003	0.041	310.1	261	0.4	3.6	0.0	0.0
2027	0.010	0.108	0.001	0.001	0.017	0.005	0.018	0.006	67.8	0.001	0.009	70.6	86	0.2	2.5	0.0	0.0
PROJECT TOTAL	0.14	1.44	0.01	0.01	0.2	0.1	0.2	0.1	887.9	0.01	0.12	924.9	826	0.3	3.5	0.0	0.0

Construction Year	Trip Type	CAP Emissions (tons/year)								GHG Emissions (MT/year)			
		ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	Fug PM_{10}	Fug $PM_{2.5}$	Tot PM_{10}	Tot $PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
2024	Worker	0.026	0.018	0.000	0.000	0.020	0.005	0.020	0.005	32.7	0.002	0.001	33.1
2024	Haul Truck	0.007	0.347	0.003	0.003	0.033	0.009	0.036	0.012	187.5	0.000	0.030	196.3
2025	Worker	0.038	0.025	0.000	0.000	0.031	0.008	0.031	0.008	49.5	0.003	0.002	50.1
2025	Haul Truck	0.010	0.463	0.004	0.004	0.045	0.013	0.049	0.017	252.7	0.000	0.040	264.6
2026	Worker	0.036	0.023	0.000	0.000	0.031	0.008	0.031	0.008	48.5	0.002	0.002	49.1
2026	Haul Truck	0.010	0.453	0.004	0.004	0.045	0.013	0.049	0.017	249.3	0.000	0.039	261.0
2027	Worker	0.007	0.005	0.000	0.000	0.007	0.002	0.007	0.002	10.4	0.001	0.000	10.5
2027	Haul Truck	0.002	0.104	0.001	0.001	0.011	0.003	0.012	0.004	57.4	0.000	0.009	60.1

Construction Phase	Construction Year	Trip Type	No. of One-way Trips/day	Days/Year	Miles/Trip	Miles/Year	EMFAC2021 Emission Factors (g/mile)									Emissions (tons/year)						Emissions (MT/year)				Fuel Consumption (gallons)	
							ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	Tot PM_{10}	Tot $PM_{2.5}$	CO_2	CH_4	N_2O	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	Tot PM_{10}	Tot $PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e	gallons/mile	gallons/year
Demolition	2024	Worker	20	44	11.7	10296.0	0.240	0.161	0.002	0.002	0.185	0.049	330.0	0.019	0.014	0.003	0.002	0.000	0.000	0.002	0.001	3.40	0.00	0.00	3.44	3.84E-02	394.98
	2024	Haul Truck	16	44	20	14080.0	0.061	2.939	0.027	0.026	0.306	0.104	1751.5	0.003	0.276	0.001	0.046	0.000	0.000	0.005	0.002	24.66	0.00	0.00	25.82	1.72E-01	2428.42
Site Preparation	2024	Worker	16	89	11.7	16660.8	0.240	0.161	0.002	0.002	0.185	0.049	330.0	0.019	0.014	0.004	0.003	0.000	0.000	0.003	0.001	5.50	0.00	0.00	5.57	3.84E-02	639.15
	2024	Haul Truck	12	89	20	21360.0	0.061	2.939	0.027	0.026	0.306	0.104	1751.5	0.003	0.276	0.001	0.069	0.001	0.001	0.007	0.002	37.41	0.00	0.01	39.17	1.72E-01	3684.02
Grading	2024	Worker	16	44	11.7	8236.8	0.240	0.161	0.002	0.002	0.185	0.049	330.0	0.019	0.014	0.002	0.001	0.000	0.000	0.002	0.000	2.72	0.00	0.00	2.76	3.84E-02	315.99
	2024	Haul Truck	12	44	20	10560.0	0.061	2.939	0.027	0.026	0.306	0.104	1751.5	0.003	0.276	0.001	0.034	0.000	0.000	0.004	0.001	18.50	0.00	0.00	19.37	1.72E-01	1821.31
Building Construction	2024	Worker	50	109	11.7	63765.0	0.240	0.161	0.002	0.002	0.185	0.049	330.0	0.019	0.014	0.017	0.011	0.000	0.000	0.013	0.003	21.04	0.00	0.00	21.33	3.84E-02	2446.20
	2024	Haul Truck	28	109	20	61040.0	0.061	2.939	0.027	0.026	0.306	0.104	1751.5	0.003	0.276	0.004	0.198	0.002	0.002	0.021	0.007	106.91	0.00	0.02	111.94	1.72E-01	10527.74
	2025	Worker	50	261	11.7	152685.0	0.226	0.147	0.002	0.002	0.185	0.048	323.9	0.017	0.013	0.038	0.025	0.000	0.000	0.031	0.008	49.46	0.00	0.00	50.10	3.76E-02	5748.58
	2025	Haul Truck	28	261	20	146160.0	0.061	2.876	0.027	0.025	0.306	0.103	1729.0	0.003	0.272	0.010	0.463	0.004	0.004	0.049	0.017	252.71	0.00	0.04	264.59	1.70E-01	24884.49
	2026	Worker	50	261	11.7	152685.0	0.214	0.135	0.002	0.002	0.185	0.048	317.9	0.016	0.012	0.036	0.023	0.000	0.000	0.031	0.008	48.53	0.00	0.00	49.15	3.69E-02	5641.48
	2026	Haul Truck	28	261	20	146160.0	0.061	2.814	0.026	0.025	0.306	0.103	1705.6	0.003	0.269	0.010	0.453	0.004	0.004	0.049	0.017	249.29	0.00	0.04	261.00	1.68E-01	24547.10
	2027	Worker	50	41	11.7	23985.0	0.203	0.124	0.002	0.002	0.185	0.048	312.0	0.015	0.011	0.005	0.003	0.000	0.000	0.005	0.001	7.48	0.00	0.00	7.57	3.63E-02	869.81
	2027	Haul Truck	28	41	20	22960.0	0.061	2.755	0.026	0.025	0.306	0.103	1680.5	0.003	0.265	0.002	0.070	0.001	0.001	0.008	0.003	38.58	0.00	0.01	40.40	1.65E-01	3799.39
Paving	2027	Worker	10	22	11.7	2574.0	0.203	0.124	0.002	0.002	0.185	0.048	312.0	0.015	0.011	0.001	0.000	0.000	0.000	0.001	0.000	0.80	0.00	0.00	0.81	3.63E-02	93.35
	2027	Haul Truck	8	22	20	3520.0	0.061	2.755	0.026	0.025	0.306	0.103	1680.5	0.003	0.265	0.000	0.011	0.000	0.000	0.001	0.000	5.92	0.00	0.00	6.19	1.65E-01	582.49
Architectural Coating	2027	Worker	24	24	11.7	6739.2	0.203	0.124	0.002	0.002	0.185	0.048	312.0	0.015	0.011	0.002	0.001	0.000	0.000	0.001	0.000	2.10	0.00	0.00	2.13	3.63E-02	244.40
	2027	Haul Truck	16	24	20	7680.0	0.061	2.755	0.026	0.025	0.306	0.103	1680.5	0.003	0.265	0.001	0.023	0.000	0.000	0.003	0.001	12.91	0.00	0.00	13.51	1.65E-01	1270.88
																										Total onroad gasoline (gallons)	16394
																										Total onroad diesel (gallons)	73546

Construction On-site Fugitive Dust Calculations - Unmitigated

Project Information

Land Uses	Size	Metric
Hotel	79	rooms
Parking (underground structure)	54	spaces
Surface parking	149	spaces

Total Project Site

Demolition Area	10,050	sq ft

Material Movement

Phase Name	Import (CY)	Export (CY)	Total (CY)
Grading	0	15,000	15000

Construction Schedule

Phase	2024	2025	2026	2027
Demolition	1.00	0	0	0
Site Preparation	1.00	0	0	0
Grading	1.00	0	0	0
Building Construction	0.16	0.39	0.39	0.06
Pavine	0	0	0	1.00
Architectural Coating	0	0	0	1.00

Off-Road Equipment Info

Phase Name	Offroad Equipment Type	NAME MATCH Offroad Equipment Type	Fuel Type	Amount	Days Used	Hours/Day Usage	Total Hours Use	Acre graded/8-hr	Acre Graded
Grading	Graders	Graders	Diesel	1	40	4	160	0.5	10

Demolition Emissions Estimates

Constants

K_{PM10} =	0.35	
$K_{PM2.5}$ =	0.053	
U =	2.2	m/s
M =	2	%
UC_1 =	2.23694	mph/[m/s]
UC_2 =	0.046	short ton/sqft
EF_{Truck} =	0.058	lb/short ton

Emission Factors Demo

EF_{PM10} =	0.0011	lb/short ton
$EF_{PM2.5}$ =	0.0002	lb/short ton

Emission Factors Debris Loading

EF_{PM10} =	0.0203	lb/short ton
$EF_{PM2.5}$ =	0.0031	lb/short ton

Demolition Emissions

Phase Name	Phase Type	2024 PM10 Lbs	2024 PM2.5 Lbs	2025 PM10 Lbs	2025 PM2.5 Lbs	2026 PM10 Lbs	2026 PM2.5 Lbs	2027 PM10 Lbs	2027 PM2.5 Lbs
Demolition	Demolition	9.89	1.50	0.00	0.00	0.00	0.00	0.00	0.00

Grader Emissions Estimates

Constants

S =	7.1	mph
$F_{PM2.5}$ =	0.031	
F_{PM10} =	0.6	
Wb =	12	ft
UC_1 =	43560	sqft/acre
UC_2 =	5280	ft/mi

Emission Factors

EF_{PM10} =	2.57	lb/VMT
EF_{TSP} =	5.37	lb/VMT
EF_{PM10} =	1.54	lb/VMT
$EF_{PM2.5}$ =	0.17	lb/VMT

Grader Activity

Phase Name	Activity Type	2024 Area Graded Acres	2024 Grader VMT total VMT	
Grading	Grader	10	6.9	All grading to occur in 2024

Grader Emissions

Phase Name	Activity Type	2024 PM10 Lbs	2024 PM2.5 Lbs
Grading	Grader	10.6	1.1

Truck Loading Emissions Estimates

Constants

K_{PM10} =	0.35	
$K_{PM2.5}$ =	0.053	
U =	2.2	m/s
M =	12	%
UC_1 =	2.24	mph/[m/s]
UC_2 =	1.26	short ton/cubic yard

Emission Factors

EF_{PM10} =	0.00009	lb/short ton
$EF_{PM2.5}$ =	0.00001	lb/short ton

Truck Loading Activity

Phase Name	Activity Type	2024 Material Movement short ton
Grading	Material Movement	18962.5

Truck Loading Emissions

Phase Name	Activity Type	2024 PM10 Lbs	2024 PM2.5 Lbs
Grading	Material Movement	1.69	0.26

4.4.1 Grading Equipment Passes

Fugitive dust emissions from grading equipment passes are estimated using the methodology described in Section 11.9 of USEPA's AP-42 (USEPA 1998b). Section 11.9 provides guidance to estimate the emission factor of PM10 by applying a scaling factor to PM15. Similarly, the emission factor of PM2.5 is scaled from that of total suspended particulates (TSP). The following presents the equations used to calculate the emission factors for PM15 and TSP and the scaling factors for PM10 and PM2.5.

$$EF_{PM15} = 0.051 \times (S)^{2.5}, \text{ and } EF_{PM10} = EF_{PM15} \times F_{PM10}$$

$$EF_{TSP} = 0.04 \times (S)^{2.5}, \text{ and } EF_{PM2.5} = EF_{TSP} \times F_{PM2.5}$$

Where:

EF = emission factor (lb/VMT).

S = mean vehicle speed (mph). The AP-42 default value is 7.1 mph.

$F_{PM2.5}$ = PM2.5 scaling factor. The AP-42 default value is 0.031.

F_{PM10} = PM10 scaling factor. The AP-42 default value is 0.6.

Grading dust emissions are calculated by multiplying the emission factors with the total VMT for the grading equipment (i.e., grader). VMT is estimated based on the dimensions of the grading area and the blade width of the grading equipment.

$$E_p = EF_p \times VMT, \text{ and}$$

$$VMT = As/Wb \times UC_1 \times UC_2$$

Where:

E = emissions (lb/day).

EF = emission factor (lb/VMT).

VMT = vehicle miles traveled (mile).

As = the acreage of the grading site (acre/day).

Wb = Blade width of the grading equipment. The program uses a default blade width of 12 feet based on Caterpillar's 140 Motor Grader (Caterpillar 2021).

UC_1 = unit conversion from acre to square feet (43,560 sqft/acre).

UC_2 = unit conversion from feet to miles (5,280 feet/mile).

p = pollutant (PM10 or PM2.5).

$$EF_p = k \times (0.0032) \times \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where:

EF = emission factor (lb/short ton).

K = particle size multiplier. The AP-42 default value for PM10 is 0.35 and that for PM2.5 is 0.053.

U = mean wind speed. The program selects wind speed based on the value listed on the **Project Detail** screen. It has been converted internally to miles per hour.

M = material moisture content (percent). The moisture contents of different materials are listed in AP-42 (USEPA 2006a Table 13.2.4-1). The program uses the moisture content of cover (12%) as default.

p = pollutant (PM10 or PM2.5).

Fugitive dust emissions are calculated by multiplying the emission factor with the throughput of loaded and unloaded material that is entered by the user (i.e., material imported and exported).

$$E_p = EF_p \times TP$$

Where:

E = emissions (lb/day).

EF = emission factor (lb/short ton).

TP = throughput of loaded and unloaded materials (short ton/day). Refer to Appendix D, *Technical Source Documentation for Emissions Calculations*, for suggested material movement quantities by project land use type and size.

p = pollutant (PM10 or PM2.5).

ROG Off-gassing from Architectural Coating & Paving

$EF = C_{VOC} * UC_1 * UC_2 + S$

Where:
EF = architectural coating emission factor (lb VOC/sq ft)
C_{VOC} = VOC content (g/L). This varies by location and year based on VOC content data provided California air districts
UC_1 = unit conversion from g to lb
UC_2 = unit conversion from gal to L
S = sq ft coated per gal

$E = EF * F * A_{paint}$

Where:
E = architectural coating emissions (lb VOC/day)
EF = architectural coating emission factor (lb VOC/sq ft)
F = fraction of surface area.
Apaint = building surface area painted (sq ft)

Total surface for painting = (2.0 times the building square footage for non-residential land uses)

Project Information

Land Uses	Size	Metric	Size	Metric	Lot Acreage
Hotel	79	rooms	78,500	sq ft	
Parking (underground structure)	54	spaces		sq ft	
Surface parking	149	spaces	26224	sq ft	0.60

Architectural Coating	
100%	exterior of buildings painted

Fugitive Off-Gassing Emissions Estimates

Hotel

	Total Building Square Footage (sq ft)	78,500	
	Total Surface area painting (sq ft)	157,000	*total surface for painting equals two times that for nonresidential square footage*
	Surface Area Interior (sq ft)	117,750	*75% for the interior surfaces and 25% for the exterior shell.*
	Surface Area Exterior (sq ft)	39,250	
Hotel_Nonresidential Interior	Surface Area Interior (sq ft)	117,750	*area painted*
Hotel_Nonresidential Exterior	Surface Area Exterior (sq ft)	39250	*area painted*

Emission Factors Painting

Air District	Surface Type	ROG EF	UOM	ROG EF	UOM
BAAQMD	Nonresidential Exterior	150	g/L	0.00695	lb/sq ft
BAAQMD	Nonresidential Interior	100	g/L	0.00464	lb/sq ft
BAAQMD	Residential Exterior	150	g/L	0.00695	lb/sq ft
BAAQMD	Residential Interior	100	g/L	0.00464	lb/sq ft
BAAQMD	Parking	100	g/L	0.00464	lb/sq ft

UC_1 =	0.002204623	lb/g
UC_2 =	3.78541	L/gal
S =	180	sq ft/gal

Parking (underground structure)

rground structure)_Paving Off-Gasing	Paving Acreage (acre)	0.00	*parking garage = concrete*
king (underground structure)_Parking	Paving painted (sq ft)	0	*Default percent of parking lot area that is painted: 6%*

Surface parking

Surface parking_Paving Off-Gasing	Paving Acreage (acre)	0.60	
Surface parking_Parking	Paving painted (sq ft)	1573	*Default percent of parking lot area that is painted: 6%*

Emission Factors Paving

	ROG EF	UOM
Paving Off-Gasing	2.62	lb/acre

	Lookup	Surface Area	UOM	EF	UOM	ROG Emissions	UOM	ROG Emissions	UOM	
Architectural Coating Hotel	Hotel_Nonresidential Interior	117,750	sq ft	0.00464	lb/sq ft	545.9	lb	0.3	tons	
Architectural Coating Hotel	Hotel_Nonresidential Exterior	39,250	sq ft	0.00695	lb/sq ft	273.0	lb	0.1365	tons	
Paving Parking Structure	Parking (underground structure)_Paving Off-Gasing	0.00	acre	2.62000	lb/acre	0.0	lb	0.0000	tons	
rchitectural Coating Parking Structure	Parking (underground structure)_Parking	0	sq ft	0.00464	lb/sq ft	0.0	lb	0.0000	tons	
Paving Surface Parking	Surface parking_Paving Off-Gasing	0.60	acre	2.62000	lb/acre	1.6	lb	0.0008	tons	
Architectural Coating Surface Parking	Surface parking_Parking	1,573	sq ft	0.00464	lb/sq ft	7.3	lb	0.0036	tons	
								0.0	tons	Paving
								0.413	tons	Architectural Coating

Construction Entrained Dust Calculation

Napa County

Road Dust Equation

E [lb/VMT] = k*(sL)^0.91 * (W)^1.02 * (1-P/4N)

Where:
E = the particulate emission factor in units of pounds of particulate matter per VMT
k = the U.S. EPA AP-42 particle size multiplier (PM_{10} = 0.0022 lb/VMT),[1]
sL = the roadway-specific silt loading in grams/square meter (g/m_2),[2,3,4,5]
W = the average weight of vehicles traveling the road (California statewide default = 2.4 tons),[5]
P = number of "wet" days, when at least one site per county received at least 0.01 inch of precipitation during the annual averaging period,[9] and
N = the number of days in the annual averaging period (default = 365)

Source: California Air Resources Board (CARB), Miscellaneous Process Methodology 7.9 — Entrained Road Travel, Paved Road Dust. Revised and updated March 2021, https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

Silt Loading Factor

Source: CARB, 2021.

Table 3.a: California Default Statewide and Local Silt Loading Values

Silt Loadings (g/m^2)			
Freeway	**Major**	**Collector**	**Local**
0.015	0.032	0.032	0.32

Table 2. 2017 Roadway Travel Fraction and				
0.18	0.57	0.16	0.09	Napa County

Re-entrained PAVED Road Dust Emission Factors

Methodology

Calculation Methodology: USEPA AP-42, Paved Roads, Section 13.2.1, Revised January 2011:
www.epa.gov/sites/default/files/2020-10/documents/13.2.1_paved_roads.pdf

K-value from CARB, 2021.

Pollutant	**Variables**					**E_{ext} (g/mi)**
	k	**sL**	**W**	**P**	**N**	
PM_{10}	1.00	0.05486	2.4	68	365	**0.16589**
$PM_{2.5}$	0.25	0.05486	2.4	68	365	**0.04147**

Where:	**Source**
E = particulate emission factor (grams of particulate matter/VMT)	*calculation*
k = particle size multiplier (g/VMT)	*Table 13.2.1-1 Particle Size Multipliers for Paved Road Equation of*
sL = local roadway silt loading (g/m^2)	*calculated based on CARB, 2021.*
W = average weight of vehicles on the road (tons)	*calculated based on CARB, 2021.*
P = number of wet days with at least 0.254mm of precipitation	*Table 5 of CARB, 2021.*
N = number of days in the averaging period	annual days (365)

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Napa
Calendar Year: 2024, 2025, 2026, 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT. trips/year for Trips. kWh/year for Energy Consumption. tons/year for Emissions. 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_TOTEX		PM2.5_TOTEX		PM2.5_TOTAL		PM10_TOTEX		PM10_TOTAL		CO2_TOTEX		CH4_TOTEX		N2O_TOTEX		ROG_TOTAL		CO_TOTEX		Fuel Consumption	
							miles/year	miles/year	miles/year	trips/year	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	tons/year	g/mile	1000 gallons/year	gallons/mile
Napa	2024	LDA	Aggregate	Aggregate	Gasoline	40855.513	586221553.1	586221553.1	0	65295623	49.71418866	0.077	0.889889385	0.001	3.982066162	0.006	0.9678359	0.001	11.27965218	0.017	181790.9145	281.324	7.269565103	0.011	5.73092081	0.009	83.1710071	0.129	747.64743	1.157	19169.62479	3.27E-02
Napa	2024	LDT1	Aggregate	Aggregate	Gasoline	5069.6334	59252697.63	59252697.63	0	7582945.2	14.67423803	0.225	0.150386944	0.002	0.501868851	0.008	0.163554986	0.003	1.317080251	0.020	22403.57408	343.009	1.628101874	0.025	1.12282316	0.017	22.6002266	0.346	168.51746	2.580	2362.428894	3.99E-02
Napa	2024	LDT2	Aggregate	Aggregate	Gasoline	21254.485	296633225.5	296633225.5	0	34154198	38.22851586	0.117	0.477829045	0.001	2.191704026	0.007	0.519680505	0.002	6.16385396	0.019	115363.1446	352.812	4.434803797	0.014	3.58915487	0.011	45.0635094	0.138	440.06675	1.346	12164.89946	4.10E-02
Napa	2024	HHDT	Aggregate	Aggregate	Diesel	1022.1609	34272307.41	34272307.41	0	4339393.8	111.0237819	2.939	0.975915063	0.026	2.345212823	0.062	1.020041612	0.027	5.30754104	0.140	66171.14798	1751.545	0.106496898	0.003	10.4252913	0.276	2.292849	0.061	26.537702	0.702	5911.042437	1.72E-01
Napa	2025	LDA	Aggregate	Aggregate	Gasoline	40789.674	589624064.8	589624064.8	0	65184533	45.99430108	0.071	0.865527232	0.001	3.975299748	0.006	0.941339837	0.001	11.31200251	0.017	178913.2378	275.273	6.790602181	0.010	5.49845425	0.008	79.2736711	0.122	705.77414	1.086	18866.17738	3.20E-02
Napa	2025	LDT1	Aggregate	Aggregate	Gasoline	4830.1357	56622848.2	56622848.2	0	7212723.1	12.77562199	0.205	0.135517607	0.002	0.471594012	0.008	0.147387762	0.002	1.25027122	0.020	21077.27685	337.690	1.440271154	0.023	1.00356995	0.016	20.2746459	0.325	148.93985	2.386	2222.572508	3.93E-02
Napa	2025	LDT2	Aggregate	Aggregate	Gasoline	21230.739	297158385.6	297158385.6	0	34061291	35.11801995	0.107	0.468048881	0.001	2.186487415	0.007	0.509045863	0.002	6.167609788	0.019	112998.6461	344.970	4.187547523	0.013	3.41990217	0.010	43.6657816	0.133	416.53022	1.272	11915.56605	4.01E-02
Napa	2025	HHDT	Aggregate	Aggregate	Diesel	1039.7209	34155241.09	34155241.09	0	4413929	108.292327	2.876	0.958324606	0.025	2.322246053	0.062	1.001655792	0.027	5.272540228	0.140	65097.17798	1729.023	0.106243453	0.003	10.2560869	0.272	2.28739241	0.061	26.706534	0.709	5815.105122	1.70E-01
Napa	2026	LDA	Aggregate	Aggregate	Gasoline	40797.157	593250360.8	593250360.8	0	65200685	42.96749533	0.066	0.839741197	0.001	3.968240967	0.006	0.913295171	0.001	11.34660099	0.017	176133.0567	269.339	6.371189207	0.010	5.30726456	0.008	75.6590991	0.116	670.22783	1.025	18573.01076	3.13E-02
Napa	2026	LDT1	Aggregate	Aggregate	Gasoline	4612.0537	54164554.37	54164554.37	0	6876200.7	11.17411151	0.187	0.123004828	0.002	0.444624848	0.007	0.133778974	0.002	1.189164631	0.020	19842.47526	332.335	1.279386938	0.021	0.90112884	0.015	18.2111939	0.305	132.3059	2.216	2092.364224	3.86E-02
Napa	2026	LDT2	Aggregate	Aggregate	Gasoline	21207.727	297099004.5	297099004.5	0	33970679	32.48058564	0.099	0.455058006	0.001	2.174583441	0.007	0.494917102	0.002	6.156408271	0.019	110521.6336	337.475	3.964150392	0.012	3.27402746	0.010	42.4010369	0.129	395.99452	1.209	11654.36817	3.92E-02
Napa	2026	HHDT	Aggregate	Aggregate	Diesel	1053.8232	34003845.55	34003845.55	0	4471762.4	105.4945733	2.814	0.947893947	0.025	2.30999551	0.062	0.990753505	0.026	5.254831368	0.140	63929.94858	1705.580	0.105868926	0.003	10.0721894	0.269	2.27932895	0.061	26.804417	0.715	5710.836982	1.68E-01
Napa	2027	LDA	Aggregate	Aggregate	Gasoline	40830.809	598033292.4	598033292.4	0	65255626	40.54372348	0.062	0.809822068	0.001	3.963127203	0.006	0.880755388	0.001	11.3969846	0.017	173877.303	263.763	6.008649628	0.009	5.15670165	0.008	73.0433214	0.111	640.94874	0.972	18335.14434	3.07E-02
Napa	2027	LDT1	Aggregate	Aggregate	Gasoline	4405.9902	51968808.15	51968808.15	0	6562940.7	9.772874605	0.171	0.111352241	0.002	0.419958662	0.007	0.121105722	0.002	1.133777336	0.020	18726.06972	326.889	1.136543337	0.020	0.81118164	0.014	16.4556452	0.287	117.45957	2.050	1974.640654	3.80E-02
Napa	2027	LDT2	Aggregate	Aggregate	Gasoline	21175.862	297356936.3	297356936.3	0	33866105	30.20223161	0.092	0.438633425	0.001	2.160777738	0.007	0.477053872	0.001	6.146677424	0.019	108304.3962	330.418	3.761824525	0.011	3.14888291	0.010	41.1715981	0.126	378.44826	1.155	11420.56326	3.84E-02
Napa	2027	HHDT	Aggregate	Aggregate	Diesel	1063.2497	33782368.52	33782368.52	0	4510189.6	102.5877925	2.755	0.935738405	0.025	2.295092932	0.062	0.978048344	0.026	5.231938411	0.140	62580.2403	1680.517	0.105219783	0.003	9.85954234	0.265	2.26535308	0.061	26.821928	0.720	5590.268076	1.65E-01

Estimation of Composite Emission factors

Year	Trip Type	Vehicle Type	ROG	NOx	Ex PM_{10}	Ex $PM_{2.5}$	Tot PM_{10}	Tot $PM_{2.5}$	CO_2	CH_4	N_2O	gallons/mile
2024	Worker	25% LDA, 50% LDT1, 25% LDT2	0.2396	0.1608	0.0020	0.0019	0.0192	0.0071	330.0382	0.0187	0.0136	3.84E-02
2024	Haul Truck	HHDT	0.0607	2.9388	0.0270	0.0258	0.1405	0.0621	1751.5445	0.0028	0.2760	1.72E-01
2025	Worker	25% LDA, 50% LDT1, 25% LDT2	0.2262	0.1468	0.0019	0.0018	0.0191	0.0070	323.9058	0.0173	0.0128	3.76E-02
2025	Haul Truck	HHDT	0.0608	2.8763	0.0266	0.0255	0.1400	0.0617	1729.0226	0.0028	0.2724	1.70E-01
2026	Worker	25% LDA, 50% LDT1, 25% LDT2	0.2138	0.1348	0.0018	0.0017	0.0190	0.0069	317.8712	0.0162	0.0121	3.69E-02
2026	Haul Truck	HHDT	0.0608	2.8145	0.0264	0.0253	0.1402	0.0616	1705.5803	0.0028	0.2687	1.68E-01
2027	Worker	25% LDA, 50% LDT1, 25% LDT2	0.2027	0.1237	0.0018	0.0016	0.0189	0.0068	311.9895	0.0151	0.0114	3.63E-02
2027	Haul Truck	HHDT	0.0608	2.7549	0.0263	0.0251	0.1405	0.0616	1680.5173	0.0028	0.2648	1.65E-01

Inn at the Abbey Project
CalEEMod Output for Operational Criteria Air Pollutant Emissions

Inn at the Abbey - Napa, CA Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

3.3. Site Preparation (2024) - Unmitigated

3.5. Grading (2024) - Unmitigated

3.7. Building Construction (2024) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Building Construction (2026) - Unmitigated

3.13. Building Construction (2027) - Unmitigated

3.15. Paving (2027) - Unmitigated

3.17. Architectural Coating (2027) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Inn at the Abbey - Napa, CA
Construction Start Date	6/1/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	32.4
Location	3022 St Helena Hwy, St Helena, CA 94574, USA
County	Napa
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	816
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.16

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Hotel	79.0	Room	0.54	78,500	79,300	—	—	—
Parking Lot	149	Space	0.28	0.00	0.00	—	—	—
Enclosed Parking Structure	54.0	Space	0.10	21,600	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.66	34.6	12.2	14.6	0.03	0.53	1.69	2.14	0.49	0.35	0.76	—	3,983	3,983	0.17	0.33	7.84	4,093
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.43	34.6	3.57	4.51	0.01	0.10	0.79	0.81	0.09	0.20	0.21	—	1,578	1,578	0.06	0.19	0.11	1,636
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.45	2.30	3.10	3.87	0.01	0.12	0.48	0.60	0.11	0.11	0.21	—	1,122	1,122	0.05	0.10	1.24	1,152
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.42	0.57	0.71	< 0.005	0.02	0.09	0.11	0.02	0.02	0.04	—	186	186	0.01	0.02	0.21	191

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.66	1.36	12.2	14.6	0.03	0.53	1.69	2.14	0.49	0.35	0.76	—	3,983	3,983	0.17	0.33	7.84	4,093
2025	0.29	0.23	1.31	2.76	0.01	0.01	0.63	0.64	0.01	0.16	0.17	—	1,280	1,280	0.04	0.15	4.02	1,329
2026	0.28	0.22	1.26	2.59	0.01	0.01	0.63	0.64	0.01	0.16	0.17	—	1,258	1,258	0.04	0.14	3.76	1,305
2027	0.26	34.6	1.72	2.38	0.01	0.04	0.36	0.39	0.03	0.09	0.12	—	955	955	0.03	0.10	2.05	988
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.43	0.34	3.57	4.51	0.01	0.10	0.63	0.67	0.09	0.16	0.21	—	1,411	1,411	0.06	0.15	0.11	1,449
2025	0.28	0.23	1.43	2.56	0.01	0.01	0.63	0.64	0.01	0.16	0.17	—	1,251	1,251	0.05	0.15	0.10	1,296
2026	0.27	0.22	1.36	2.39	0.01	0.01	0.63	0.64	0.01	0.16	0.17	—	1,229	1,229	0.05	0.15	0.10	1,274
2027	0.31	34.6	2.22	2.81	0.01	0.04	0.79	0.81	0.04	0.20	0.21	—	1,578	1,578	0.05	0.19	0.11	1,636
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.45	0.37	3.10	3.87	0.01	0.12	0.48	0.60	0.11	0.10	0.21	—	1,122	1,122	0.05	0.09	0.96	1,152
2025	0.20	0.16	0.99	1.76	< 0.005	0.01	0.44	0.45	0.01	0.11	0.12	—	896	896	0.03	0.10	1.24	929
2026	0.19	0.15	0.94	1.65	< 0.005	0.01	0.44	0.45	0.01	0.11	0.12	—	880	880	0.03	0.10	1.16	913
2027	0.05	2.30	0.29	0.43	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	—	224	224	0.01	0.03	0.26	232
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.57	0.71	< 0.005	0.02	0.09	0.11	0.02	0.02	0.04	—	186	186	0.01	0.02	0.16	191
2025	0.04	0.03	0.18	0.32	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	148	148	0.01	0.02	0.21	154
2026	0.03	0.03	0.17	0.30	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	146	146	0.01	0.02	0.19	151
2027	0.01	0.42	0.05	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	37.1	37.1	< 0.005	< 0.005	0.04	38.4

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.87	5.43	3.76	29.1	0.07	0.11	5.42	5.52	0.10	1.38	1.48	27.2	7,338	7,365	3.07	0.31	145	7,677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.00	4.61	4.19	23.7	0.06	0.10	5.42	5.52	0.10	1.38	1.48	27.2	7,014	7,041	3.10	0.33	123	7,340
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.35	4.94	4.02	24.9	0.06	0.10	5.30	5.41	0.10	1.35	1.45	27.2	7,062	7,089	3.09	0.32	132	7,394
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.61	0.90	0.73	4.55	0.01	0.02	0.97	0.99	0.02	0.25	0.26	4.50	1,169	1,174	0.51	0.05	21.9	1,224

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.03	2.78	3.11	24.3	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	6,252	6,252	0.23	0.29	21.9	6,365
Area	0.77	2.62	0.04	4.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	17.9	17.9	< 0.005	< 0.005	—	18.0
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,058	1,058	0.12	0.01	—	1,063
Water	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Waste	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Total	3.87	5.43	3.76	29.1	0.07	0.11	5.42	5.52	0.10	1.38	1.48	27.2	7,338	7,365	3.07	0.31	145	7,677

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.94	2.67	3.58	23.2	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	5,946	5,946	0.26	0.31	0.57	6,046
Area	—	1.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,058	1,058	0.12	0.01	—	1,063
Water	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Waste	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Total	3.00	4.61	4.19	23.7	0.06	0.10	5.42	5.52	0.10	1.38	1.48	27.2	7,014	7,041	3.10	0.33	123	7,340
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.90	2.64	3.39	22.3	0.06	0.05	5.30	5.36	0.05	1.35	1.40	—	5,985	5,985	0.24	0.30	9.44	6,091
Area	0.38	2.26	0.02	2.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.83	8.83	< 0.005	< 0.005	—	8.86
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,058	1,058	0.12	0.01	—	1,063
Water	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Waste	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Total	3.35	4.94	4.02	24.9	0.06	0.10	5.30	5.41	0.10	1.35	1.45	27.2	7,062	7,089	3.09	0.32	132	7,394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.53	0.48	0.62	4.06	0.01	0.01	0.97	0.98	0.01	0.25	0.26	—	991	991	0.04	0.05	1.56	1,008
Area	0.07	0.41	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
Energy	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	175	175	0.02	< 0.005	—	176
Water	—	—	—	—	—	—	—	—	—	—	—	0.64	1.60	2.23	0.07	< 0.005	—	4.34
Waste	—	—	—	—	—	—	—	—	—	—	—	3.86	0.00	3.86	0.39	0.00	—	13.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.3	20.3
Total	0.61	0.90	0.73	4.55	0.01	0.02	0.97	0.99	0.02	0.25	0.26	4.50	1,169	1,174	0.51	0.05	21.9	1,224

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	2.44	3.26	0.01	0.09	—	0.09	0.08	—	0.08	—	530	530	0.02	< 0.005	—	532
Demolition	—	—	—	—	—	—	0.22	0.22	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	2.44	3.26	0.01	0.09	—	0.09	0.08	—	0.08	—	530	530	0.02	< 0.005	—	532
Demolition	—	—	—	—	—	—	0.22	0.22	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.9	63.9	< 0.005	< 0.005	—	64.1
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.06	0.99	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	177	177	0.01	0.01	0.79	—
Vendor	0.02	0.01	0.40	0.16	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	274	274	0.01	0.04	0.72	—
Hauling	0.03	0.01	0.59	0.19	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	442	442	0.02	0.07	0.95	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.90	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	165	165	0.01	0.01	0.02	—
Vendor	0.02	0.01	0.42	0.16	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	274	274	0.01	0.04	0.02	—
Hauling	0.03	0.01	0.63	0.19	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	442	442	0.02	0.07	0.02	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	0.04	—
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.0	33.0	< 0.005	< 0.005	0.04	—
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.3	53.3	< 0.005	0.01	0.05	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.32	3.32	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.47	5.47	< 0.005	< 0.005	0.01	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.82	8.82	< 0.005	< 0.005	0.01	—

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	0.93	7.98	9.00	0.01	0.42	—	0.42	0.39	—	0.39	—	1,372	1,372	0.06	0.01	—	1,376
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	1.95	2.19	< 0.005	0.10	—	0.10	0.10	—	0.10	—	334	334	0.01	< 0.005	—	336
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	55.4	55.4	< 0.005	< 0.005	—	55.6

Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.79	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	141	141	0.01	0.01	0.63	—
Vendor	0.02	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.58	—
Hauling	0.02	0.01	0.40	0.13	< 0.005	0.01	0.07	0.08	< 0.005	0.02	0.02	—	295	295	0.01	0.05	0.63	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.4	32.4	< 0.005	< 0.005	0.07	—
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.4	53.4	< 0.005	0.01	0.06	—
Hauling	0.01	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	71.9	71.9	< 0.005	0.01	0.07	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.85	8.85	< 0.005	< 0.005	0.01	—
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.01	—

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.79	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	141	141	0.01	0.01	0.63	—
Vendor	0.02	0.01	0.32	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.58	—
Hauling	0.02	0.01	0.40	0.13	< 0.005	0.01	0.07	0.08	< 0.005	0.02	0.02	—	295	295	0.01	0.05	0.63	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.0	16.0	< 0.005	< 0.005	0.03	—
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.4	26.4	< 0.005	< 0.005	0.03	—
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.5	35.5	< 0.005	0.01	0.03	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.66	2.66	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.37	4.37	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.88	5.88	< 0.005	< 0.005	0.01	—

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.15	2.48	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	442	442	0.02	0.02	1.97	—
Vendor	0.06	0.03	1.03	0.41	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	712	712	0.03	0.11	1.87	—
Hauling	0.01	< 0.005	0.20	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	147	147	0.01	0.02	0.32	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.20	2.26	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	412	412	0.01	0.02	0.05	—
Vendor	0.06	0.03	1.09	0.42	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	712	712	0.03	0.11	0.05	—
Hauling	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	147	147	0.01	0.02	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.65	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	124	124	0.01	0.01	0.26	—
Vendor	0.02	0.01	0.32	0.12	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	213	213	0.01	0.03	0.24	—
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.1	44.1	< 0.005	0.01	0.04	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.6	20.6	< 0.005	< 0.005	0.04	—
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.3	35.3	< 0.005	0.01	0.04	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	—

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.14	2.31	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	434	434	0.01	0.02	1.84	—
Vendor	0.05	0.03	0.98	0.38	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	701	701	0.03	0.11	1.87	—
Hauling	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	145	145	0.01	0.02	0.31	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.19	2.10	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	404	404	0.01	0.02	0.05	—
Vendor	0.05	0.03	1.04	0.40	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	702	702	0.03	0.11	0.05	—
Hauling	0.01	< 0.005	0.20	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	145	145	0.01	0.02	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.15	0.14	0.12	1.44	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	291	291	0.01	0.01	0.57	—
Vendor	0.04	0.02	0.73	0.28	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	501	501	0.02	0.08	0.58	—
Hauling	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	103	103	< 0.005	0.02	0.10	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.3	48.3	< 0.005	< 0.005	0.09	—
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.0	83.0	< 0.005	0.01	0.10	—
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	—

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.20	0.14	2.16	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	426	426	0.01	0.02	1.70	—
Vendor	0.05	0.03	0.94	0.37	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	690	690	0.03	0.11	1.77	—
Hauling	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	142	142	0.01	0.02	0.29	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.17	1.95	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	397	397	0.01	0.02	0.04	—
Vendor	0.05	0.02	0.99	0.38	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	690	690	0.03	0.11	0.05	—
Hauling	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	142	142	0.01	0.02	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.13	0.11	1.34	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	286	286	0.01	0.01	0.52	—
Vendor	0.04	0.02	0.69	0.27	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	493	493	0.02	0.08	0.55	—
Hauling	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.02	0.09	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.4	47.4	< 0.005	< 0.005	0.09	—
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	81.6	81.6	< 0.005	0.01	0.09	—
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.8	16.8	< 0.005	< 0.005	0.02	—

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.16	1.82	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	390	390	0.01	0.02	0.04	—
Vendor	0.05	0.02	0.94	0.36	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	677	677	0.02	0.10	0.04	—
Hauling	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	139	139	0.01	0.02	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45.4	45.4	< 0.005	< 0.005	0.08	—
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.1	78.1	< 0.005	0.01	0.08	—
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.01	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.52	7.52	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.01	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.66	2.66	< 0.005	< 0.005	< 0.005	—

3.15. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	77.9	77.9	< 0.005	< 0.005	0.01	—
Vendor	0.01	< 0.005	0.22	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.01	—

Hauling	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	139	139	0.01	0.02	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.74	4.74	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.41	9.41	< 0.005	< 0.005	0.01	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.38	8.38	< 0.005	< 0.005	0.01	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.56	1.56	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	—

3.17. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.89	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	164	164	0.01	< 0.005	—	165
Architectural Coatings	—	34.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.89	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	164	164	0.01	< 0.005	—	165

Architectural	—	34.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Architectural Coatings	—	2.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.79	1.79	< 0.005	< 0.005	—	1.79
Architectural Coatings	—	0.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.06	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	< 0.005	0.01	0.75	—
Vendor	0.02	0.01	0.41	0.16	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.05	0.76	—
Hauling	0.02	0.01	0.36	0.12	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	0.01	0.05	0.54	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.08	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	187	187	0.01	0.01	0.02	—
Vendor	0.02	0.01	0.44	0.17	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.05	0.02	—

Hauling	0.02	0.01	0.37	0.12	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	0.01	0.05	0.01	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.4	12.4	< 0.005	< 0.005	0.02	—
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.5	20.5	< 0.005	< 0.005	0.02	—
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.06	2.06	< 0.005	< 0.005	< 0.005	—
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.40	3.40	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.03	3.03	< 0.005	< 0.005	< 0.005	—

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	3.03	2.78	3.11	24.3	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	6,252	6,252	0.23	0.29	21.9	6,365
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.03	2.78	3.11	24.3	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	6,252	6,252	0.23	0.29	21.9	6,365

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	2.94	2.67	3.58	23.2	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	5,946	5,946	0.26	0.31	0.57	6,046
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.94	2.67	3.58	23.2	0.06	0.05	5.42	5.47	0.05	1.38	1.43	—	5,946	5,946	0.26	0.31	0.57	6,046
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.53	0.48	0.62	4.06	0.01	0.01	0.97	0.98	0.01	0.25	0.26	—	991	991	0.04	0.05	1.56	1,008
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.53	0.48	0.62	4.06	0.01	0.01	0.97	0.98	0.01	0.25	0.26	—	991	991	0.04	0.05	1.56	1,008

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	281	281	0.05	0.01	—	284
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.89	5.89	< 0.005	< 0.005	—	5.94

Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	42.3	42.3	0.01	< 0.005	—	42.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	330	330	0.05	0.01	—	333
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	281	281	0.05	0.01	—	284
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.89	5.89	< 0.005	< 0.005	—	5.94
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	42.3	42.3	0.01	< 0.005	—	42.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	330	330	0.05	0.01	—	333
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	46.6	46.6	0.01	< 0.005	—	47.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.97	0.97	< 0.005	< 0.005	—	0.98
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	7.00	7.00	< 0.005	< 0.005	—	7.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	54.6	54.6	0.01	< 0.005	—	55.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	729	729	0.06	< 0.005	—	731

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	729	729	0.06	< 0.005	—	731
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	729	729	0.06	< 0.005	—	731
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	729	729	0.06	< 0.005	—	731
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	121	121	0.01	< 0.005	—	121
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	121	121	0.01	< 0.005	—	121

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.77	0.71	0.04	4.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	17.9	17.9	< 0.005	< 0.005	—	18.0
Total	0.77	2.62	0.04	4.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	17.9	17.9	< 0.005	< 0.005	—	18.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	0.06	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
Total	0.07	0.41	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.84	9.64	13.5	0.40	0.01	—	26.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	0.64	1.60	2.23	0.07	< 0.005	—	4.34
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.64	1.60	2.23	0.07	< 0.005	—	4.34

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	23.3	0.00	23.3	2.33	0.00	—	81.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Hotel	—	—	—	—	—	—	—	—	—	—	—	3.86	0.00	3.86	0.39	0.00	—	13.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.86	0.00	3.86	0.39	0.00	—	13.5

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	123
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.3	20.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.3	20.3

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	3/1/2024	5/1/2024	5.00	44.0	—
Site Preparation	Site Preparation	4/1/2024	8/1/2024	5.00	89.0	—
Grading	Grading	6/1/2024	8/1/2024	5.00	44.0	—
Building Construction	Building Construction	8/1/2024	2/28/2027	5.00	672	—
Paving	Paving	2/28/2027	3/30/2027	5.00	22.0	—
Architectural Coating	Architectural Coating	3/30/2027	4/30/2027	5.00	24.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Average	1.00	4.00	36.0	0.38
Demolition	Dumpers/Tenders	Diesel	Average	3.00	3.00	16.0	0.38
Demolition	Skid Steer Loaders	Diesel	Average	2.00	4.00	71.0	0.37
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	84.0	0.37
Site Preparation	Excavators	Diesel	Average	1.00	3.60	36.0	0.38
Site Preparation	Dumpers/Tenders	Diesel	Average	3.00	2.36	16.0	0.38
Site Preparation	Skid Steer Loaders	Diesel	Average	2.00	3.37	71.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	3.60	36.0	0.46
Site Preparation	Trenchers	Diesel	Average	1.00	3.15	40.0	0.50
Site Preparation	Other Construction Equipment	Diesel	Average	2.00	4.00	82.0	0.42

Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Architectural Coating	Concrete/Industrial Saws	Diesel	Average	1.00	2.50	33.0	0.73
Architectural Coating	Cement and Mortar Mixers	Diesel	Average	1.00	2.50	10.0	0.56
Architectural Coating	Forklifts	Diesel	Average	1.00	3.33	82.0	0.20
Architectural Coating	Pressure Washers	Diesel	Average	1.00	1.25	14.0	0.30

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	20.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	10.0	8.40	HHDT,MHDT
Demolition	Hauling	6.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	16.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	8.00	8.40	HHDT,MHDT
Site Preparation	Hauling	4.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	16.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	8.00	8.40	HHDT,MHDT
Grading	Hauling	4.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—

Building Construction	Worker	50.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	26.0	8.40	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	6.00	8.40	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	24.0	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	12.0	8.40	HHDT,MHDT
Architectural Coating	Hauling	4.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	117,948	39,272	985

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	10,050	—
Site Preparation	0.00	0.00	44.5	0.00	—
Grading	0.00	0.00	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.38

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Hotel	0.00	0%
Parking Lot	0.28	100%
Enclosed Parking Structure	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Hotel	645	645	645	235,294	7,607	7,607	7,607	2,776,464
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	117,948	39,272	985

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Hotel	503,490	204	0.0330	0.0040	2,273,674

Parking Lot	10,532	204	0.0330	0.0040	0.00
Enclosed Parking Structure	75,631	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Hotel	2,003,975	866,138
Parking Lot	0.00	0.00
Enclosed Parking Structure	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Hotel	43.3	—
Parking Lot	0.00	—
Enclosed Parking Structure	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0

Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	15.3	annual days of extreme heat
Extreme Precipitation	15.5	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	15.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	4	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	4	1	1	4
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	14.9
AQ-PM	10.5
AQ-DPM	20.6
Drinking Water	96.6
Lead Risk Housing	52.0
Pesticides	77.7
Toxic Releases	18.0
Traffic	33.4
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	43.8
Haz Waste Facilities/Generators	61.6
Impaired Water Bodies	43.8
Solid Waste	88.9

Sensitive Population	—
Asthma	17.0
Cardio-vascular	4.36
Low Birth Weights	33.4
Socioeconomic Factor Indicators	—
Education	49.6
Housing	15.5
Linguistic	55.1
Poverty	16.6
Unemployment	51.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	74.11779802
Employed	68.38188118
Median HI	82.47144874
Education	—
Bachelor's or higher	73.95098165
High school enrollment	100
Preschool enrollment	90.56845887
Transportation	—
Auto Access	95.6242782
Active commuting	73.09123572
Social	—
2-parent households	86.32105736

Voting	86.80867445
Neighborhood	—
Alcohol availability	59.38662903
Park access	12.0107789
Retail density	3.503143847
Supermarket access	39.81778519
Tree canopy	93.82779417
Housing	—
Homeownership	66.6495573
Housing habitability	97.20261773
Low-inc homeowner severe housing cost burden	82.66392917
Low-inc renter severe housing cost burden	98.13935583
Uncrowded housing	83.16437829
Health Outcomes	—
Insured adults	57.69280123
Arthritis	0.0
Asthma ER Admissions	95.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	94.3
Cognitively Disabled	82.5
Physically Disabled	87.9
Heart Attack ER Admissions	99.5

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	96.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	8.4
SLR Inundation Area	0.0
Children	89.4
Elderly	2.6
English Speaking	65.5
Foreign-born	20.4
Outdoor Workers	37.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.6
Traffic Density	45.1
Traffic Access	23.0
Other Indices	—
Hardship	16.6
Other Decision Support	—
2016 Voting	90.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	29.0
Healthy Places Index Score for Project Location (b)	89.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Project Specific Info
Construction: Construction Phases	Project Specific Construction Schedule
Construction: Off-Road Equipment	Project Specific Construction Equipment: Default Engine Tier & HP/LF
Construction: Trips and VMT	Project Specific Construction Vehicle Trips
Operations: Vehicle Data	Project Specific Rates

Inn at the Abbey Project
Energy Estimates

The Inn at the Abbey Project

Energy Calculations - Construction

Source	MT of CO_2
Total CO_2 from Diesel use	947.2
Total CO_2 from Gasoline Use	141.0
Onsite CO_2 from diesel use	200.3
Offsite CO_2 from diesel use	746.9
Percent onsite diesel	21.1%
Percent onroad diesel	78.9%

CO_2 from diesel fuel combustion[a] = 10.2 kg of CO_2/gallon of diesel

CO_2 from gasoline fuel combustion[a] = 8.78 kg of CO_2/gallon of gasoline

[a] Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels)

Conversion 1 MT = 1000 kg

Source	Fuel Use (gallons)	Average per year (over 3 years)
Onsite Diesel	19,616	6,539
Offsite Diesel	73,153	24,384
Total Diesel	92,769	30,923
Offsite Gasoline	16,064	5,355

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Napa
Calendar Year: 2028
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	Fuel Consumption
Napa	2028	HHDT	Aggregate	Aggregate	Gasoline	0.350527005	10122.51081	10122.51081	0	2293.363591	0	26.04979336	0	0.133176119	26.18296948	2.760961417
Napa	2028	HHDT	Aggregate	Aggregate	Diesel	1067.20598	33470721.83	33470721.83	0	4528129.928	0	57363.16001	3648.269801	0	61011.42981	5450.126856
Napa	2028	HHDT	Aggregate	Aggregate	Electricity	32.27370055	987387.8109	0	987387.8109	119875.6413	1828081.838	0	0	0	0	0
Napa	2028	HHDT	Aggregate	Aggregate	Natural Gas	85.43128805	1624131.229	1624131.229	0	247557.6299	0	2362.986807	310.0630178	0	2673.049825	308.9637904
Napa	2028	LDA	Aggregate	Aggregate	Gasoline	40873.72001	602566099.9	602566099.9	0	65329093.67	0	167115.4671	0	4693.703712	171809.1708	18117.06239
Napa	2028	LDA	Aggregate	Aggregate	Diesel	157.1902364	1615842.911	1615842.911	0	225612.705	0	400.6385482	0	0	400.6385482	35.78888281
Napa	2028	LDA	Aggregate	Aggregate	Electricity	3329.026614	56512977.37	0	56512977.37	5633755.989	21818673.53	0	0	0	0	0
Napa	2028	LDA	Aggregate	Aggregate	Plug-in Hybrid	1440.881811	24678497.75	11285060.89	13393436.86	2067442.063	4045217.119	3443.756021	0	140.7324945	3584.488515	377.9798352
Napa	2028	LDT1	Aggregate	Aggregate	Gasoline	4215.754426	49919865.01	49919865.01	0	6274089.31	0	17107.56239	0	585.6876811	17693.25007	1865.731113
Napa	2028	LDT1	Aggregate	Aggregate	Diesel	0.660350706	2182.59776	2182.59776	0	634.2759943	0	0.906293035	0	0	0.906293035	0.080958798
Napa	2028	LDT1	Aggregate	Aggregate	Electricity	18.19791213	301795.5376	0	301795.5376	30378.74165	116517.9861	0	0	0	0	0
Napa	2028	LDT1	Aggregate	Aggregate	Plug-in Hybrid	12.27058349	217600.2478	91098.75608	126501.4917	17606.38536	38207.22084	27.8129353	0	1.273278336	29.08621364	3.067104886
Napa	2028	LDT2	Aggregate	Aggregate	Gasoline	21139.19419	297396478.3	297396478.3	0	33756187.59	0	103120.031	0	3046.296947	106166.3279	11195.10663
Napa	2028	LDT2	Aggregate	Aggregate	Diesel	107.8354768	1496318.154	1496318.154	0	171913.3438	0	490.7745132	0	0	490.7745132	43.84069286
Napa	2028	LDT2	Aggregate	Aggregate	Electricity	228.3390574	2929512.962	0	2929512.962	397456.3943	1131033.789	0	0	0	0	0
Napa	2028	LDT2	Aggregate	Aggregate	Plug-in Hybrid	230.5561238	3879173.749	1700622.457	2178551.292	330812.3014	657987.4215	519.0637689	0	26.15548884	545.2192577	57.49268949
Napa	2028	LHDT1	Aggregate	Aggregate	Gasoline	2066.321094	24661575.68	24661575.68	0	10066729.49	0	23569.58389	88.3462752	285.888646	23943.81881	2524.845776
Napa	2028	LHDT1	Aggregate	Aggregate	Diesel	1864.986839	21506283.1	21506283.1	0	7671154.57	0	15162.88483	89.96775803	0	15252.85259	1362.531279
Napa	2028	LHDT1	Aggregate	Aggregate	Electricity	58.98798171	1310596.256	0	1310596.256	270097.7128	858450.6644	0	0	0	0	0
Napa	2028	LHDT2	Aggregate	Aggregate	Gasoline	248.5476378	2917479.082	2917479.082	0	1210877.556	0	3164.374824	12.27625876	33.89090083	3210.541984	338.5476407
Napa	2028	LHDT2	Aggregate	Aggregate	Diesel	747.6485845	8898929.447	8898929.447	0	3075264.519	0	7523.569617	57.29543383	0	7580.865051	677.195672
Napa	2028	LHDT2	Aggregate	Aggregate	Electricity	14.95368437	317293.709	0	317293.709	64859.53733	204672.206	0	0	0	0	0
Napa	2028	MCY	Aggregate	Aggregate	Gasoline	2478.316476	4788299.509	4788299.509	0	1719951.634	0	988.8514566	0	97.86237992	1086.713837	114.5926162
Napa	2028	MDV	Aggregate	Aggregate	Gasoline	14138.18605	181733698.9	181733698.9	0	22055413.96	0	77631.82365	0	2490.990869	80122.81452	8448.85068
Napa	2028	MDV	Aggregate	Aggregate	Diesel	300.7980922	3804738.723	3804738.723	0	470214.8835	0	1667.408789	0	0	1667.408789	148.9489666
Napa	2028	MDV	Aggregate	Aggregate	Electricity	237.5772935	3040520.686	0	3040520.686	413252.8746	1173891.933	0	0	0	0	0
Napa	2028	MDV	Aggregate	Aggregate	Plug-in Hybrid	153.1032366	2513363.32	1118850.607	1394512.712	219679.4135	421184.4023	341.481165	0	21.5495956	363.0307606	38.28114011
Napa	2028	MH	Aggregate	Aggregate	Gasoline	249.8737022	768132.8993	768132.8993	0	8174.138409	0	1647.700764	0	0.27911499	1647.979879	173.7774191
Napa	2028	MH	Aggregate	Aggregate	Diesel	135.8848269	412446.6847	412446.6847	0	4443.43384	0	491.8531581	0	0	491.8531581	43.93704778
Napa	2028	MHDT	Aggregate	Aggregate	Gasoline	115.1759691	2049877.458	2049877.458	0	753552.1382	0	3895.219164	21.86705182	38.63263537	3955.718851	417.1256103
Napa	2028	MHDT	Aggregate	Aggregate	Diesel	1387.245297	17217760.13	17217760.13	0	4917071.013	0	21283.53685	1070.157169	0	22353.69402	1996.846632
Napa	2028	MHDT	Aggregate	Aggregate	Electricity	49.69083818	816880.3436	0	816880.3436	184672.5834	888190.5468	0	0	0	0	0
Napa	2028	MHDT	Aggregate	Aggregate	Natural Gas	17.25385581	234153.23	234153.23	0	50382.13613	0	247.3202382	31.31545482	0	278.635693	32.20603636
Napa	2028	OBUS	Aggregate	Aggregate	Gasoline	71.4217516	1220654.152	1220654.152	0	467285.0948	0	2356.715891	9.682992029	15.76859312	2382.167476	251.1965839
Napa	2028	OBUS	Aggregate	Aggregate	Diesel	78.40941672	1549145.639	1549145.639	0	268422.1176	0	2248.514143	62.01994083	0	2310.534084	206.3990944
Napa	2028	OBUS	Aggregate	Aggregate	Electricity	0.645945831	21724.47601	0	21724.47601	4226.175529	24067.39541	0	0	0	0	0
Napa	2028	OBUS	Aggregate	Aggregate	Natural Gas	0.61413006	12041.0377	12041.0377	0	1596.001199	0	12.67384036	0.237532709	0	12.91137307	1.492357803
Napa	2028	SBUS	Aggregate	Aggregate	Gasoline	10.73882168	222864.3449	222864.3449	0	14046.37876	0	195.9893847	9.89894177	0.849550198	206.7378767	21.80025079
Napa	2028	SBUS	Aggregate	Aggregate	Diesel	100.2413659	720996.0024	720996.0024	0	474638.8581	0	904.143244	81.77021544	0	985.9134594	88.07125878
Napa	2028	SBUS	Aggregate	Aggregate	Electricity	2.192289345	21985.59151	0	21985.59151	9302.006576	23160.84428	0	0	0	0	0
Napa	2028	SBUS	Aggregate	Aggregate	Natural Gas	5.137023524	39719.91552	39719.91552	0	24323.6009	0	54.98517821	7.484499358	0	62.46967757	7.220541941
Napa	2028	UBUS	Aggregate	Aggregate	Gasoline	32.10590206	678571.5328	678571.5328	0	41994.5199	0	943.5919861	0	2.96452713	946.5565132	99.81320162
Napa	2028	UBUS	Aggregate	Aggregate	Diesel	19.81473561	991712.5985	991712.5985	0	25917.67418	0	1245.652525	0	0	1245.652525	111.2736466
Napa	2028	UBUS	Aggregate	Aggregate	Electricity	3.840996925	187101.606	0	187101.606	5024.023978	326163.7743	0	0	0	0	0
Napa	2028	UBUS	Aggregate	Aggregate	Natural Gas	4.335785081	188536.6245	188536.6245	0	5671.206885	0	215.676825	0	0	215.676825	24.92895147
							1360455791									

Countywide

Fuel	Fuel Use		Miles per year	
	1000 gallons per year	kWh per year	VMT	eVMT
Gasoline	43571	0	1168933719	0
Diesel	10165	0	91687078	0
Natural Gas	375	0	2098582	0
Electricity	0	28392905	0	66447776
Plug-in Hybrid	477	5162596	14195633	17093002

Total County-wide VMT	1,360,455,791	miles per year
Gasoline	44,048	1000 gallons per year
Electricity	33,555,501	kWh per year
Diesel	10,165	1000 gallons per year
Natural Gas (DGE)	375	1000 gallons per year

Project VMT	2,776,464	miles per year		
Gasoline	90	1000 gallons per year	89,895	gallons per year
Electricity	68,481	kWh per year	68	Mwh per year
Diesel	21	1000 gallons per year	20,745	gallons per year
Natural Gas [1]	98,284	Btu	0.10	MMBtu

1. EMFAC2021 includes compressed natural gas in terms of diesel gallon equivalents. This is converted into Btu per the U.S. Department of Energy Alternative Fuel Data Center conversion: 1 DGE of CNG = 128,488 Btu. Available at: https://afdc.energy.gov/fuels/equivalency_methodology.html.

Operational Building Energy Use

From CalEEMod operational output,

Land Use	Electricity	Natural Gas	Electricity Use equivalent to Natural Gas Use
	kWh/yr	kBTU/yr	kWh/yr
Hotel	503,490	2,273,674	666,376
Parking Lot	10,532	0	0
Enclosed Parking Sructure	75,631	0	0
Total	589,653	2,273,674	666,376

Total Operational Electricity Use =	1,256,029	kWh/yr
	1,256	MWh/yr

1 kWh =	3412	BTU
1 BTU =	0.000293083	kWh

Operational Building Energy Use Summary

	Electricity	Natural Gas
	kWh/yr	kBTU/yr
Unmitigated	589,653	2,273,674
Mitigated with MM GHG-1	1,256,029	0

Attachment B
Construction Health Risk Assessment Worksheets and AERMOD Outputs

Inn at the Abbey Project
Construction Health Risk Assessment

Inn at the Abbey Project
Summary of Health Risk Assessment Results

Construction

Receptor	Cancer Risk			Chronic Hazard Index			Annual Average $PM_{2.5}$ Concentration			
	(# in one million)	UTM X	UTM Y	(unitless)	UTM X	UTM Y	($\mu g/m^3$)	UTM X	UTM Y	
Unmitigated										
Resident - child	6.6	544003	4264093	0.007	544003	4264093	0.05	544003	4264093	1179 Lodi Lane
Worker	0.7	543883	4264193	0.052	543883	4264193	0.24	543883	4264193	
Mitigated										
Resident - child	0.6	544003	4264093	0.001	544003	4264093	0.01	544003	4264093	
Worker	0.0	543883	4264193	0.004	543883	4264193	0.02	543883	4264193	

Onroad Construction Emissions - DPM (Ex PM10 and Tot PM2.5) for HRA

Year	Number of Workdays	Tons per year			
		Ex PM_{10}	Ex $PM_{2.5}$	Fug $PM_{2.5}$	Tot $PM_{2.5}$
2024	218	0.003	0.003	0.014	0.018
2025	261	0.005	0.004	0.020	0.025
2026	261	0.005	0.004	0.020	0.025
2027	86	0.001	0.001	0.005	0.006
Project Total	826	0.014	0.013	0.060	0.073

Source	AERMOD Source	Construction Year	Start Date	End Date	Unmitigated (tpy)		Mitigated (tpy)	
					DPM (Ex PM_{10})	$PM_{2.5}$	DPM (Ex PM_{10})	$PM_{2.5}$
North Parcel emissions - Exhaust	PAREA1	2024	3/1/2024	12/31/2024	0.015	0.014	0.001	0.001
		2025	1/1/2025	12/31/2025	0.008	0.007	0.001	0.001
		2026	1/1/2026	12/31/2026	0.007	0.007	0.001	0.001
		2027	1/1/2027	4/30/2027	0.002	0.002	0.000	0.000
North Parcel emissions - Fugitive Dust	PAREA2	2024	3/1/2024	12/31/2024	0.000	0.001	0.000	0.001
		2025	1/1/2025	12/31/2025	0.000	0.000	0.000	0.000
		2026	1/1/2026	12/31/2026	0.000	0.000	0.000	0.000
		2027	1/1/2027	4/30/2027	0.000	0.000	0.000	0.000
South Parcel emissions - Exhaust	PAREA3	2024	3/1/2024	12/31/2024	0.007	0.006	0.000	0.000
		2025	1/1/2025	12/31/2025	0.003	0.003	0.000	0.000
		2026	1/1/2026	12/31/2026	0.003	0.003	0.000	0.000
		2027	1/1/2027	4/30/2027	0.001	0.001	0.000	0.000
South Parcel emissions - Fugitive Dust	PAREA4	2024	3/1/2024	12/31/2024	0.000	0.000	0.000	0.000
		2025	1/1/2025	12/31/2025	0.000	0.000	0.000	0.000
		2026	1/1/2026	12/31/2026	0.000	0.000	0.000	0.000
		2027	1/1/2027	4/30/2027	0.000	0.000	0.000	0.000
Construction Truck Trips - Exhaust & Fugitive Dust	SLINE1	2024	3/1/2024	12/31/2024	0.0002	0.0008	0.0002	0.0008
		2025	1/1/2025	12/31/2025	0.0002	0.0012	0.0002	0.0012
		2026	1/1/2026	12/31/2026	0.0002	0.0012	0.0002	0.0012
		2027	1/1/2027	4/30/2027	0.0000	0.0003	0.0000	0.0003
					0.047	0.047	0.005	0.008

	Sq ft	Fraction of Total
NP Modeled Area =	119640.4	0.69
SP Modeled Area =	53133	0.31
Total =	172773.4	1.00

Modeled trip length =	1498.1	m
Default haul trip length =	20	miles
Haul trip modeled fraction =	0.047	

Inn at the Abbey Project
Construction Health Risk Calculations - Residential Unmitigated
Incremental Lifetime Cancer Risk and Hazard Index Calculations

					Exposure Duration (Days)						DPM	
				Start Date	3/1/2024	5/31/2024	6/1/2026				Emisions (tons)	Emission Rate (g/s)
				Stop Date	5/30/2024	5/31/2026						
Source	AERMOD Source	Year	Start Date	End Date	3rd Trimester	0<2	2<16	Exposure Duration	Calendar Days	Workdays	Uncontrolled	Uncontrolled
	PAREA1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.015	0.002
North Parcel emissions -	PAREA1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.008	0.001
Exhaust	PAREA1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.007	0.001
	PAREA1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.002	0.000
	PAREA2	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
North Parcel emissions -	PAREA2	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
Fugitive Dust	PAREA2	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA2	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
	PAREA3	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.007	0.001
South Parcel emissions -	PAREA3	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.003	0.000
Exhaust	PAREA3	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.003	0.000
	PAREA3	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.001	0.000
	PAREA4	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
South Parcel emissions -	PAREA4	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
Fugitive Dust	PAREA4	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA4	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
	SLINE1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
Construction Truck Trips -	SLINE1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
Exhaust & Fugitive Dust	SLINE1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	SLINE1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000

Cancer Risk Factors

	Abbreviation	UOM	3rd Trimester	0<2	2<16
Daily Breathing Rate	DBR	L/kg-day	361	1090	572
Fraction Of Time At Home	FAH	unitless	0.85	0.85	0.72
Exposure Frequency	EF	days/year	0.96	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10	3
Inhalation Absorption Factor	A	unitless	1	1	1
Conversion Factor	CF_1	m^3/L	0.001	0.001	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001	0.001	0.001
Cancer Potency Factor (diesel exhaust)	CPF	$mg/kg\text{-}day^{-1}$	1.1	1.1	1.1
Averaging Time (for residential exposure)	AT	years	70.00	70.00	70.00

School/daycare unmitigated risk is assumed at <1 as there are no schools/daycare within 1,000 feet of the project site

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* . February 2015
Daily breathing rate for residential receptor is based on the OEHHA 95th percentile moderate intensity breathing rates (OEHHA Table 5.7).
Fraction of time at home is set to values per OEHHA Table 8.4 for residential since the nearest school has an unmitigated cancer risk of <1 per million.
Inhalation cancer potency factor from OEHHA Table 7.1

Hazard Index

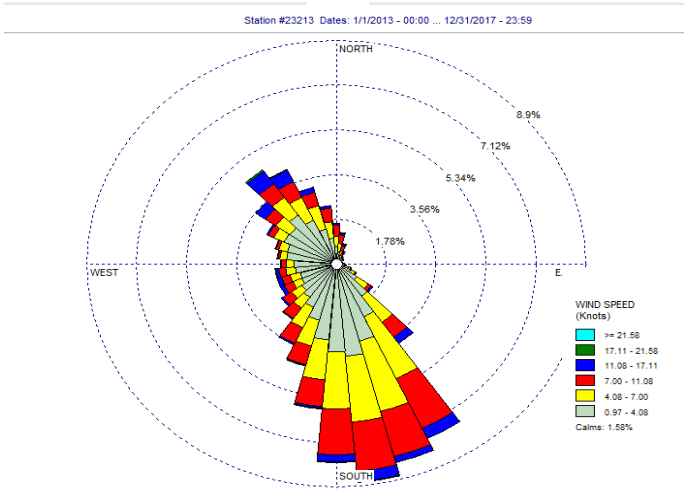
Chronic Inhalation	REL	$\mu g/m^3$	5

Intake Factor for Inhalation, IF (m^3/kg-day) = DBR*FAH*EF*ED*ASF*A*CF/AT

AERMOD Source	3rd Trimester	0<2	2<16
PAREA1	0.010	0.075	0.000
PAREA1	0.000	0.127	0.000
PAREA1	0.000	0.053	0.010
PAREA1	0.000	0.000	0.006
PAREA2	0.010	0.075	0.000
PAREA2	0.000	0.127	0.000
PAREA2	0.000	0.053	0.010
PAREA2	0.000	0.000	0.006
PAREA3	0.010	0.075	0.000
PAREA3	0.000	0.127	0.000
PAREA3	0.000	0.053	0.010
PAREA3	0.000	0.000	0.006
PAREA4	0.010	0.075	0.000
PAREA4	0.000	0.127	0.000
PAREA4	0.000	0.053	0.010
PAREA4	0.000	0.000	0.006
SLINE1	0.010	0.075	0.000
SLINE1	0.000	0.127	0.000
SLINE1	0.000	0.053	0.010
SLINE1	0.000	0.000	0.006

Risk Calculation Part 1, R1 = IF*CPF*CF

3rd Trimester	0<2	2<16
1.15E-05	8.22E-05	0.00E+00
0.00E+00	1.40E-04	0.00E+00
0.00E+00	5.78E-05	1.09E-05
0.00E+00	0.00E+00	6.07E-06
1.15E-05	8.22E-05	0.00E+00
0.00E+00	1.40E-04	0.00E+00
0.00E+00	5.78E-05	1.09E-05
0.00E+00	0.00E+00	6.07E-06
1.15E-05	8.22E-05	0.00E+00
0.00E+00	1.40E-04	0.00E+00
0.00E+00	5.78E-05	1.09E-05
0.00E+00	0.00E+00	6.07E-06
1.15E-05	8.22E-05	0.00E+00
0.00E+00	1.40E-04	0.00E+00
0.00E+00	5.78E-05	1.09E-05
0.00E+00	0.00E+00	6.07E-06
1.15E-05	8.22E-05	0.00E+00
0.00E+00	1.40E-04	0.00E+00
0.00E+00	5.78E-05	1.09E-05
0.00E+00	0.00E+00	6.07E-06



MEIR - Resident Infant	Cancer Risk	UTM X	UTM Y
Residence	6.64	544002.7	4264092.6
1179 Lodi lane			

HI	UTM X	UTM Y
0.007	544002.7	4264092.6

Inn at the Abbey Project
Construction Health Risk Calculations - Residential Unmitigated
Annual Average $PM_{2.5}$ Concentration Calculations

					Exposure Duration (Days)						$PM_{2.5}$	
				Start Date	3/1/2024	5/31/2024	6/1/2026				Emisions (tons)	Emission Rate (g/s)
				Stop Date	5/30/2024	5/31/2026						
Source	AERMOD Source	Year	Start Date	End Date	3rd Trimester	0<2	2<16	Exposure Duration	Calendar Days	Workdays	Uncontrolled	Uncontrolled
	PAREA1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.014	0.001
North Parcel emissions -	PAREA1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.007	0.001
Exhaust	PAREA1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.007	0.001
	PAREA1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.002	0.000
	PAREA2	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.001	0.000
North Parcel emissions -	PAREA2	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
Fugitive Dust	PAREA2	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA2	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
	PAREA3	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.006	0.001
South Parcel emissions -	PAREA3	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.003	0.000
Exhaust	PAREA3	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.003	0.000
	PAREA3	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.001	0.000
	PAREA4	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
South Parcel emissions -	PAREA4	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
Fugitive Dust	PAREA4	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA4	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
	SLINE1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.001	0.000
Construction Truck Trips -	SLINE1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.001	0.000
Exhaust & Fugitive Dust	SLINE1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.001	0.000
	SLINE1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000

	$PM_{2.5}$	UTM X	UTM Y
MEIR			
Residence	0.054	544002.7	4264092.6

Inn at the Abbey Project
Construction Health Risk Calculations - Worker Unmitigated
Incremental Lifetime Cancer Risk and Hazard Index Calculations

					Exposure Duration (Days)						DPM	
				Start Date	3/1/2024	5/31/2024	6/1/2026				Emissions (tons)	Emission Rate (g/s)
				Stop Date	5/30/2024	5/31/2026						
Source	AERMOD Source	Year	Start Date	End Date	3rd Trimester	0<2	2<16	Exposure Duration	Calendar Days	Workdays	Uncontrolled	Uncontrolled
North Parcel emissions - Exhaust	PAREA1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.015	0.002
	PAREA1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.008	0.001
	PAREA1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.007	0.001
	PAREA1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.002	0.000
North Parcel emissions - Fugitive Dust	PAREA2	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
	PAREA2	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
	PAREA2	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA2	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
South Parcel emissions - Exhaust	PAREA3	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.007	0.001
	PAREA3	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.003	0.000
	PAREA3	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.003	0.000
	PAREA3	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.001	0.000
South Parcel emissions - Fugitive Dust	PAREA4	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
	PAREA4	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
	PAREA4	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA4	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
Construction Truck Trips - Exhaust & Fugitive Dust	SLINE1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
	SLINE1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
	SLINE1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	SLINE1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000

Cancer Risk Factors

	Abbreviation	UOM	16<70	
8HR Breathing Rate (95th percentile)	8HR-BR	L/kg-day	230	95th percentile
Worker Adjustment Factor	WAF	unitless	4.20	Worst case
Exposure Frequency	EF	days/year	0.68	
Age Sensitivity Factor	ASF	unitless	1	
Inhalation Absorption Factor	A	unitless	1	
Conversion Factor	CF_1	m^3/L	0.001	
Conversion Factor	CF_2	$\mu g/m^3$	0.001	
Cancer Potency Factor (diesel exhaust)	CPF	$mg/kg\text{-}day^{-1}$	1.1	
Averaging Time (for residential exposure)	AT	years	70.00	

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* . February 2015
Daily breathing rate for residential receptor is based on the OEHHA 95th percentile moderate intensity breathing rates (OEHHA Table 5.7).
Fraction of time at home is set to values per OEHHA Table 8.4 for residential since the nearest school has an unmitigated cancer risk of <1 per million.
Inhalation cancer potency factor from OEHHA Table 7.1

Hazard Index

Chronic Inhalation	REL	$\mu g/m^3$	5

Intake Factor for Inhalation, IF (m^3/kg-day) = DBR*FAH*EF*ED*ASF*A*CF/AT

AERMOD Source	16<70
PAREA1	0.002
PAREA1	0.000
PAREA1	0.000
PAREA1	0.000
PAREA2	0.002
PAREA2	0.000
PAREA2	0.000
PAREA2	0.000
PAREA3	0.002
PAREA3	0.000
PAREA3	0.000
PAREA3	0.000
PAREA4	0.002
PAREA4	0.000
PAREA4	0.000
PAREA4	0.000
SLINE1	0.002
SLINE1	0.000
SLINE1	0.000
SLINE1	0.000

Risk Calculation Part 1, R1 = IF*CPF*CF

16<70
2.59E-06
0.00E+00
0.00E+00
0.00E+00
2.59E-06
0.00E+00
0.00E+00
0.00E+00
2.59E-06
0.00E+00
0.00E+00
0.00E+00
2.59E-06
0.00E+00
0.00E+00
0.00E+00
2.59E-06
0.00E+00
0.00E+00
0.00E+00

	Cancer Risk	UTM X	UTM Y		HI	UTM X	UTM Y		
MEIR								543883	4264193
Worker	0.67	543882.7	4264192.6		0.052	543882.7	4264192.6		

WAF Calculation

Basis and Source: OEHHA Air Toxics Hot Spots Program, Feb. 2015.

https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Please note that worker adjustment factor does not apply if the source's emission schedule and the offsite worker's schedule do not overlap. Since the worker is not present during the time that the source is emitting, the worker is not exposed to the source's emission (i.e., the DF in Equation 4.2 becomes 0).

$$WAF = \frac{H_{residentid}}{H_{source}} \times \frac{D_{residentid}}{D_{source}} \times DF \qquad \text{Eq. 4.1}$$

4-44

Where:
WAF = the worker adjustment factor
$H_{residential}$= the number of hours per day the long-term residential concentration is based on (always 24 hours)
H_{source} = the number of hours the source operates per day
$D_{residential}$ = the number of days per week the long-term residential concentration is based on (always 7 days)
D_{source}= the number of days the source operates per week
DF = a discount factor for when the offsite worker's schedule partially overlaps the source's emission schedule. Use 1 if the offsite worker's schedule occurs within the source's emission schedule. If the offsite worker's schedule partially overlaps with the source's emission schedule, then calculate the discount factor using Equation 4.2 below.

$$DF = \frac{H_{coincident}}{H_{worker}} \times \frac{D_{coincident}}{D_{worker}} \qquad \text{Eq. 4.2}$$

Where:
DF = the discount factor for assessing cancer impacts
$H_{coincident}$ = the number of hours per day the offsite worker's schedule and the source's emission schedule overlap
$D_{coincident}$= the number of days per week the offsite worker's schedule and the source's emission schedule overlap
H_{worker} = the number of hours the offsite worker works per day
D_{worker}= the number of days the offsite worker works per week

Inn at the Abbey Project
Construction Health Risk Calculations - Worker Unmitigated
Annual Average $PM_{2.5}$ Concentration Calculations

					Exposure Duration (Days)						$PM_{2.5}$	
				Start Date	3/1/2024	5/31/2024	6/1/2026				Emisions (tons)	Emission Rate (g/s)
				Stop Date	5/30/2024	5/31/2026						
Source	AERMOD Source	Year	Start Date	End Date	3rd Trimester	0<2	2<16	Exposure Duration	Calendar Days	Workdays	Uncontrolled	Uncontrolled
North Parcel emissions - Exhaust	PAREA1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.014	0.001
	PAREA1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.007	0.001
	PAREA1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.007	0.001
	PAREA1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.002	0.000
North Parcel emissions - Fugitive Dust	PAREA2	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.001	0.000
	PAREA2	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
	PAREA2	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA2	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
South Parcel emissions - Exhaust	PAREA3	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.006	0.001
	PAREA3	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.003	0.000
	PAREA3	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.003	0.000
	PAREA3	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.001	0.000
South Parcel emissions - Fugitive Dust	PAREA4	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.000	0.000
	PAREA4	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.000	0.000
	PAREA4	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.000	0.000
	PAREA4	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000
Construction Truck Trips - Exhaust & Fugitive Dust	SLINE1	2024	3/1/2024	12/31/2024	91	215	0	305	305	218	0.001	0.000
	SLINE1	2025	1/1/2025	12/31/2025	0	365	0	364	364	261	0.001	0.000
	SLINE1	2026	1/1/2026	12/31/2026	0	151	213	364	364	261	0.001	0.000
	SLINE1	2027	1/1/2027	4/30/2027	0	0	119	119	119	86	0.000	0.000

MEIR	$PM_{2.5}$	UTM X	UTM Y
Worker	0.240	543882.7	4264192.6

Cumulative Health Risk

Inn at the Abbey Project
Cumulative Health Risks at Residential MEIR for Construction

BAAQMD Permitted Stationary Sources[1]					
Facility Name	**Address**	**Source Details**	**Health Risk at Source**		
			Cancer Risk	**Chronic Hazard Index**	**$PM_{2.5}$**
Jackson Family Wines (Freemark Abbey Winery)	3022 SAINT HELENA HIGHWAY	Generator	7.52	0.002	0.010
Background Risks from Mobile Sources[2]					
Onroad			5.59	0.014	0.109
Rail			-	-	-
Project[3]					
Construction			6.64	0.007	0.054
TOTAL			19.8	0.02	0.17
BAAQMD Cumulative Thresholds			100	10	0.8

NOTES:
1. Stationary source health risk data from BAAQMD's Stationary Source Screening Map at https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3.
2. Mobile source risks from data downloaded from BAAQMD's Mobile Source Screening Map at https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429.
3. From Project HRA.

UTM		Onroad Cancer Risk	Onroad Hazard Index	Onroad PM2.5	Rail Cancer Risk	Rail Hazard Index	Rail PM2.5
544003	4264093	5.592139	0.013873	0.109002	na	na	na

Source: Data downloaded from BAAQMD's Mobile Source Screening Map at https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429

AERMOD Model Outputs

Inn at the Abbey Project

Summary of AERMOD Area Source Outputs for All Offsite Receptors

			Construction Sources				
x	y	x_y	PAREA1	PAREA2	PAREA3	PAREA4	SLINE1
543363	4263573	543362.72_4263572.62	0.02505	0.02267	0.02224	0.02216	0.04273
543383	4263573	543382.72_4263572.62	0.0264	0.02398	0.02304	0.02441	0.04492
543403	4263573	543402.72_4263572.62	0.02839	0.02558	0.02423	0.02703	0.04745
543423	4263573	543422.72_4263572.62	0.02959	0.02663	0.02535	0.02903	0.04895
543443	4263573	543442.72_4263572.62	0.03044	0.02739	0.02666	0.03003	0.05009
543463	4263573	543462.72_4263572.62	0.03194	0.02835	0.02821	0.02996	0.05154
543483	4263573	543482.72_4263572.62	0.03402	0.02949	0.03053	0.02891	0.05367
543503	4263573	543502.72_4263572.62	0.03671	0.03093	0.03387	0.02775	0.05654
543523	4263573	543522.72_4263572.62	0.03956	0.03235	0.0371	0.02733	0.05921
543543	4263573	543542.72_4263572.62	0.04213	0.03382	0.04045	0.02825	0.06176
543563	4263573	543562.72_4263572.62	0.04489	0.03548	0.0439	0.03036	0.06442
543583	4263573	543582.72_4263572.62	0.04836	0.03799	0.04787	0.03342	0.0681
543603	4263573	543602.72_4263572.62	0.05313	0.04203	0.05283	0.03797	0.07361
543623	4263573	543622.72_4263572.62	0.05777	0.04717	0.05727	0.04345	0.07987
543643	4263573	543642.72_4263572.62	0.06252	0.05281	0.06073	0.04954	0.08654
543663	4263573	543662.72_4263572.62	0.06693	0.05848	0.06338	0.05628	0.09244
543683	4263573	543682.72_4263572.62	0.07202	0.06424	0.06604	0.0637	0.09826
543703	4263573	543702.72_4263572.62	0.07894	0.07029	0.07005	0.07189	0.10525
543723	4263573	543722.72_4263572.62	0.08752	0.07763	0.07736	0.08122	0.11361
543743	4263573	543742.72_4263572.62	0.09759	0.08518	0.08707	0.08833	0.12418
543763	4263573	543762.72_4263572.62	0.10998	0.09327	0.09879	0.09262	0.13695
543783	4263573	543782.72_4263572.62	0.12651	0.1033	0.11209	0.09801	0.15132
543803	4263573	543802.72_4263572.62	0.14458	0.11836	0.12875	0.11277	0.16796
543823	4263573	543822.72_4263572.62	0.16736	0.13545	0.1471	0.13099	0.18602
543943	4263573	543942.72_4263572.62	0.40235	0.33183	0.37256	0.3413	0.37702
543963	4263573	543962.72_4263572.62	0.48287	0.39457	0.44634	0.41172	0.44654
543983	4263573	543982.72_4263572.62	0.56189	0.45805	0.51938	0.48872	0.51393
544143	4263573	544142.72_4263572.62	0.96401	0.83819	0.82407	0.9941	1.06108
544163	4263573	544162.72_4263572.62	1.15406	0.99558	0.97033	1.20078	1.28949
544183	4263573	544182.72_4263572.62	1.27612	1.18825	1.11079	1.4242	1.54997
544203	4263573	544202.72_4263572.62	1.3683	1.39325	1.22999	1.62396	1.87777
544223	4263573	544222.72_4263572.62	1.35331	1.58634	1.3148	1.76802	2.34779
544243	4263573	544242.72_4263572.62	1.27794	1.70652	1.34148	1.82041	3.00921
544383	4263573	544382.72_4263572.62	0.94726	1.36904	1.08151	1.44178	5.37908
544403	4263573	544402.72_4263572.62	0.91305	1.30737	1.02905	1.36299	3.78909
544423	4263573	544422.72_4263572.62	0.87911	1.24832	0.97813	1.28443	2.93352
544443	4263573	544442.72_4263572.62	0.8454	1.19051	0.92903	1.20729	2.39817
544463	4263573	544462.72_4263572.62	0.81189	1.13308	0.88123	1.13344	2.02639
543363	4263593	543362.72_4263592.62	0.02575	0.02282	0.02339	0.02173	0.04395
543383	4263593	543382.72_4263592.62	0.02756	0.02452	0.02418	0.02387	0.04647
543403	4263593	543402.72_4263592.62	0.02954	0.0263	0.02574	0.02633	0.04931
543423	4263593	543422.72_4263592.62	0.03033	0.02713	0.02596	0.02844	0.05042

543443	4263593	543442.72_4263592.62	0.03121	0.02821	0.02707	0.0306	0.05171
543463	4263593	543462.72_4263592.62	0.03289	0.02931	0.02881	0.03205	0.05355
543483	4263593	543482.72_4263592.62	0.035	0.03063	0.03113	0.03226	0.05584
543503	4263593	543502.72_4263592.62	0.0376	0.03217	0.03408	0.03135	0.05862
543523	4263593	543522.72_4263592.62	0.04021	0.03354	0.03723	0.03	0.06112
543543	4263593	543542.72_4263592.62	0.04256	0.03468	0.04037	0.02933	0.06324
543563	4263593	543562.72_4263592.62	0.04522	0.03608	0.04331	0.03026	0.06553
543583	4263593	543582.72_4263592.62	0.0493	0.0388	0.04838	0.03328	0.06997
543603	4263593	543602.72_4263592.62	0.05456	0.04283	0.05395	0.03808	0.07589
543623	4263593	543622.72_4263592.62	0.05977	0.04805	0.05924	0.04369	0.08271
543643	4263593	543642.72_4263592.62	0.06555	0.05421	0.06389	0.05015	0.09067
543663	4263593	543662.72_4263592.62	0.07392	0.0617	0.07007	0.05822	0.09957
543683	4263593	543682.72_4263592.62	0.07961	0.06903	0.07409	0.06746	0.10654
543703	4263593	543702.72_4263592.62	0.08624	0.07671	0.07852	0.07821	0.11413
543723	4263593	543722.72_4263592.62	0.09481	0.08418	0.085	0.08819	0.12336
543743	4263593	543742.72_4263592.62	0.10554	0.09196	0.09438	0.09607	0.13453
543763	4263593	543762.72_4263592.62	0.11964	0.09995	0.10615	0.10092	0.14713
543783	4263593	543782.72_4263592.62	0.13509	0.10966	0.12035	0.10758	0.16087
543803	4263593	543802.72_4263592.62	0.15456	0.12563	0.1373	0.11937	0.17846
543823	4263593	543822.72_4263592.62	0.18325	0.14613	0.16183	0.14121	0.20235
543923	4263593	543922.72_4263592.62	0.37404	0.30307	0.34273	0.30524	0.35126
543943	4263593	543942.72_4263592.62	0.43899	0.35919	0.40427	0.3699	0.40584
543963	4263593	543962.72_4263592.62	0.55161	0.4397	0.50401	0.46524	0.50379
543983	4263593	543982.72_4263592.62	0.61277	0.50054	0.56335	0.53929	0.55773
544123	4263593	544122.72_4263592.62	0.99374	0.87023	0.85637	1.02455	1.06985
544143	4263593	544142.72_4263592.62	1.13026	0.97261	0.94814	1.16676	1.25107
544163	4263593	544162.72_4263592.62	1.32599	1.2036	1.1398	1.45203	1.55181
544183	4263593	544182.72_4263592.62	1.45737	1.46264	1.29657	1.72549	1.91528
544203	4263593	544202.72_4263592.62	1.43722	1.73466	1.41357	1.94087	2.48677
544383	4263593	544382.72_4263592.62	0.96558	1.38838	1.08512	1.45344	5.33555
544403	4263593	544402.72_4263592.62	0.93029	1.33063	1.03479	1.37419	3.82442
544423	4263593	544422.72_4263592.62	0.89414	1.2696	0.98306	1.29153	2.96899
544443	4263593	544442.72_4263592.62	0.85854	1.2099	0.9332	1.21328	2.42881
544463	4263593	544462.72_4263592.62	0.82395	1.15209	0.8857	1.14251	2.0553
543363	4263613	543362.72_4263612.62	0.02652	0.02321	0.02472	0.02219	0.04537
543383	4263613	543382.72_4263612.62	0.02861	0.02482	0.0259	0.02398	0.04825
543403	4263613	543402.72_4263612.62	0.03045	0.02661	0.02688	0.02575	0.05086
543423	4263613	543422.72_4263612.62	0.03141	0.0277	0.0274	0.02766	0.05216
543443	4263613	543442.72_4263612.62	0.03253	0.02886	0.02792	0.03002	0.05376
543463	4263613	543462.72_4263612.62	0.03424	0.03027	0.02947	0.03256	0.05577
543483	4263613	543482.72_4263612.62	0.03647	0.03181	0.03175	0.03441	0.05839
543503	4263613	543502.72_4263612.62	0.03893	0.03334	0.03449	0.03483	0.06102
543523	4263613	543522.72_4263612.62	0.04101	0.03458	0.03718	0.03367	0.06294
543543	4263613	543542.72_4263612.62	0.04306	0.03568	0.04028	0.03202	0.06489
543563	4263613	543562.72_4263612.62	0.04625	0.0374	0.04421	0.0317	0.06798
543583	4263613	543582.72_4263612.62	0.05104	0.04019	0.04923	0.03377	0.07286
543603	4263613	543602.72_4263612.62	0.05643	0.04427	0.05532	0.03844	0.07901

543623	4263613	543622.72_4263612.62	0.06219	0.04944	0.06144	0.04427	0.08624
543643	4263613	543642.72_4263612.62	0.06982	0.05589	0.06705	0.05104	0.09508
543663	4263613	543662.72_4263612.62	0.0778	0.06407	0.07462	0.05929	0.10471
543683	4263613	543682.72_4263612.62	0.08611	0.07393	0.08121	0.07099	0.11548
543703	4263613	543702.72_4263612.62	0.09357	0.0821	0.08605	0.0823	0.12424
543723	4263613	543722.72_4263612.62	0.1047	0.09091	0.09321	0.09454	0.13486
543743	4263613	543742.72_4263612.62	0.11748	0.09968	0.10333	0.1048	0.14697
543763	4263613	543762.72_4263612.62	0.13113	0.10953	0.11707	0.11249	0.15976
543783	4263613	543782.72_4263612.62	0.14683	0.11971	0.1314	0.11755	0.1736
543803	4263613	543802.72_4263612.62	0.16788	0.13381	0.1482	0.12788	0.19126
543823	4263613	543822.72_4263612.62	0.19632	0.15476	0.17427	0.14889	0.21538
543863	4263613	543862.72_4263612.62	0.27302	0.21101	0.2478	0.20314	0.27577
543883	4263613	543882.72_4263612.62	0.31178	0.24281	0.28243	0.23308	0.30503
543903	4263613	543902.72_4263612.62	0.35257	0.27889	0.31975	0.27134	0.33491
543923	4263613	543922.72_4263612.62	0.40375	0.32624	0.37054	0.32807	0.37592
543943	4263613	543942.72_4263612.62	0.47305	0.38795	0.43629	0.39923	0.43435
543963	4263613	543962.72_4263612.62	0.59884	0.479	0.55053	0.50764	0.54401
543983	4263613	543982.72_4263612.62	0.65579	0.54389	0.60316	0.58683	0.59758
544123	4263613	544122.72_4263612.62	1.22226	1.04276	1.02761	1.25182	1.2949
544143	4263613	544142.72_4263612.62	1.3471	1.18604	1.1385	1.43426	1.5241
544163	4263613	544162.72_4263612.62	1.47081	1.41773	1.29631	1.70238	1.85645
544183	4263613	544182.72_4263612.62	1.56218	1.74146	1.46414	2.01299	2.39449
544423	4263613	544422.72_4263612.62	0.9083	1.28896	0.9861	1.29658	2.94553
544443	4263613	544442.72_4263612.62	0.87113	1.228	0.93621	1.22141	2.43214
544463	4263613	544462.72_4263612.62	0.83552	1.16954	0.88989	1.15617	2.06741
543363	4263633	543362.72_4263632.62	0.0275	0.02347	0.02593	0.02249	0.04673
543383	4263633	543382.72_4263632.62	0.02933	0.02526	0.02713	0.02426	0.04966
543403	4263633	543402.72_4263632.62	0.03122	0.02683	0.0282	0.02575	0.05238
543423	4263633	543422.72_4263632.62	0.03246	0.02817	0.02867	0.02719	0.05398
543443	4263633	543442.72_4263632.62	0.03361	0.02942	0.02936	0.02921	0.05551
543463	4263633	543462.72_4263632.62	0.03559	0.03123	0.03088	0.03206	0.05806
543483	4263633	543482.72_4263632.62	0.03799	0.03305	0.03302	0.03506	0.06101
543503	4263633	543502.72_4263632.62	0.04025	0.03466	0.03531	0.03713	0.06343
543523	4263633	543522.72_4263632.62	0.04205	0.03575	0.03747	0.03734	0.06529
543543	4263633	543542.72_4263632.62	0.04456	0.03725	0.04071	0.03628	0.06769
543563	4263633	543562.72_4263632.62	0.04829	0.03925	0.04506	0.03512	0.07137
543583	4263633	543582.72_4263632.62	0.05326	0.04238	0.0509	0.03616	0.07651
543603	4263633	543602.72_4263632.62	0.05877	0.04639	0.05742	0.03952	0.08286
543623	4263633	543622.72_4263632.62	0.0651	0.05142	0.06396	0.04516	0.09062
543643	4263633	543642.72_4263632.62	0.07357	0.05791	0.07043	0.05231	0.09998
543663	4263633	543662.72_4263632.62	0.08236	0.0668	0.07978	0.06097	0.11067
543683	4263633	543682.72_4263632.62	0.09251	0.07768	0.08782	0.07309	0.12414
543703	4263633	543702.72_4263632.62	0.10369	0.08726	0.09425	0.08564	0.13516
543723	4263633	543722.72_4263632.62	0.11456	0.0972	0.10381	0.10034	0.1465
543743	4263633	543742.72_4263632.62	0.12897	0.10929	0.11647	0.11426	0.16072
543763	4263633	543762.72_4263632.62	0.14519	0.11986	0.13084	0.12444	0.17573
543783	4263633	543782.72_4263632.62	0.16314	0.13067	0.1456	0.13073	0.19092

543803	4263633	543802.72_4263632.62	0.1852	0.1453	0.16359	0.14125	0.20973
543823	4263633	543822.72_4263632.62	0.21788	0.16757	0.19165	0.16136	0.23571
543843	4263633	543842.72_4263632.62	0.26072	0.19816	0.23459	0.19252	0.27095
543863	4263633	543862.72_4263632.62	0.3045	0.23188	0.27666	0.22536	0.30566
543883	4263633	543882.72_4263632.62	0.34778	0.26746	0.3154	0.26007	0.33807
543903	4263633	543902.72_4263632.62	0.38772	0.30407	0.3528	0.2973	0.3655
543923	4263633	543922.72_4263632.62	0.4404	0.35442	0.40479	0.35645	0.40669
543943	4263633	543942.72_4263632.62	0.51361	0.42181	0.47427	0.43421	0.46852
543963	4263633	543962.72_4263632.62	0.63361	0.51695	0.5858	0.54549	0.57575
544023	4263633	544022.72_4263632.62	1.26549	0.93041	1.01495	1.11297	1.00331
544043	4263633	544042.72_4263632.62	1.50975	1.22499	1.29158	1.48547	1.21839
544063	4263633	544062.72_4263632.62	1.55385	1.32051	1.36474	1.59812	1.32617
544083	4263633	544082.72_4263632.62	1.54762	1.33416	1.36702	1.60853	1.40779
544103	4263633	544102.72_4263632.62	1.53129	1.34382	1.34334	1.62485	1.50699
544123	4263633	544122.72_4263632.62	1.56393	1.445	1.37878	1.74859	1.69548
544143	4263633	544142.72_4263632.62	1.66742	1.63876	1.4695	1.96321	2.00317
544163	4263633	544162.72_4263632.62	1.67642	1.85442	1.56182	2.16999	2.44824
544443	4263633	544442.72_4263632.62	0.88433	1.24867	0.94211	1.23919	2.40472
544463	4263633	544462.72_4263632.62	0.84769	1.18864	0.89842	1.17954	2.06133
543363	4263653	543362.72_4263652.62	0.02813	0.0237	0.02705	0.02267	0.04806
543383	4263653	543382.72_4263652.62	0.03012	0.02545	0.0283	0.02456	0.05099
543403	4263653	543402.72_4263652.62	0.03196	0.02705	0.02941	0.02608	0.05382
543423	4263653	543422.72_4263652.62	0.03344	0.02851	0.0302	0.02736	0.05588
543443	4263653	543442.72_4263652.62	0.0348	0.02996	0.03076	0.02886	0.05761
543463	4263653	543462.72_4263652.62	0.03697	0.03186	0.03248	0.03135	0.06059
543483	4263653	543482.72_4263652.62	0.03972	0.03404	0.03485	0.03471	0.06411
543503	4263653	543502.72_4263652.62	0.04193	0.03587	0.03688	0.0377	0.06663
543523	4263653	543522.72_4263652.62	0.04414	0.03751	0.03884	0.03998	0.06887
543543	4263653	543542.72_4263652.62	0.04688	0.03933	0.0421	0.0408	0.0716
543563	4263653	543562.72_4263652.62	0.05075	0.04164	0.0467	0.04037	0.07565
543583	4263653	543582.72_4263652.62	0.05574	0.04481	0.05298	0.04012	0.08101
543603	4263653	543602.72_4263652.62	0.0617	0.04889	0.05965	0.04205	0.08779
543623	4263653	543622.72_4263652.62	0.06891	0.05433	0.0669	0.04702	0.0962
543643	4263653	543642.72_4263652.62	0.07822	0.06136	0.07618	0.05424	0.10603
543663	4263653	543662.72_4263652.62	0.08743	0.07039	0.08507	0.06393	0.11782
543683	4263653	543682.72_4263652.62	0.09988	0.0811	0.09414	0.07515	0.13233
543703	4263653	543702.72_4263652.62	0.11279	0.09379	0.10563	0.08993	0.14673
543723	4263653	543722.72_4263652.62	0.12413	0.10448	0.11393	0.10445	0.15861
543743	4263653	543742.72_4263652.62	0.14045	0.11713	0.12656	0.1213	0.17435
543763	4263653	543762.72_4263652.62	0.16052	0.13078	0.14339	0.13799	0.19333
543783	4263653	543782.72_4263652.62	0.18405	0.14528	0.16313	0.14857	0.21298
543803	4263653	543802.72_4263652.62	0.21099	0.16153	0.18566	0.15875	0.23522
543823	4263653	543822.72_4263652.62	0.24633	0.18479	0.2183	0.1789	0.26395
543843	4263653	543842.72_4263652.62	0.29033	0.21648	0.26096	0.21105	0.29967
543863	4263653	543862.72_4263652.62	0.33799	0.25355	0.30704	0.24848	0.33754
543883	4263653	543882.72_4263652.62	0.38963	0.29569	0.35358	0.29187	0.37706
543903	4263653	543902.72_4263652.62	0.44747	0.34499	0.40814	0.34432	0.42078

543923	4263653	543922.72_4263652.62	0.51367	0.40325	0.47046	0.41156	0.4702
544043	4263653	544042.72_4263652.62	1.6549	1.39112	1.44319	1.68678	1.36314
544063	4263653	544062.72_4263652.62	1.8057	1.76356	1.69476	2.10782	1.6445
544083	4263653	544082.72_4263652.62	1.82411	1.86035	1.73379	2.2156	1.81189
544103	4263653	544102.72_4263652.62	1.82954	1.9402	1.73541	2.30503	2.01275
543363	4263673	543362.72_4263672.62	0.02859	0.02396	0.028	0.02286	0.04908
543383	4263673	543382.72_4263672.62	0.03071	0.02572	0.02942	0.02474	0.05233
543403	4263673	543402.72_4263672.62	0.0327	0.02736	0.03085	0.0264	0.05537
543423	4263673	543422.72_4263672.62	0.03454	0.02896	0.03193	0.02793	0.058
543443	4263673	543442.72_4263672.62	0.03612	0.03046	0.03277	0.02928	0.06008
543463	4263673	543462.72_4263672.62	0.0385	0.03258	0.03436	0.03138	0.06338
543483	4263673	543482.72_4263672.62	0.04192	0.03506	0.03681	0.03435	0.06772
543503	4263673	543502.72_4263672.62	0.04438	0.03719	0.03888	0.03753	0.07071
543523	4263673	543522.72_4263672.62	0.04645	0.03916	0.04105	0.04088	0.07312
543543	4263673	543542.72_4263672.62	0.04928	0.04117	0.04408	0.04371	0.07603
543563	4263673	543562.72_4263672.62	0.05338	0.04396	0.04877	0.04529	0.08044
543583	4263673	543582.72_4263672.62	0.05887	0.04739	0.05501	0.04578	0.08638
543603	4263673	543602.72_4263672.62	0.06561	0.05211	0.06239	0.0472	0.094
543623	4263673	543622.72_4263672.62	0.07458	0.05764	0.07164	0.0509	0.10304
543643	4263673	543642.72_4263672.62	0.08363	0.06539	0.08162	0.05713	0.11368
543663	4263673	543662.72_4263672.62	0.09415	0.07467	0.0912	0.06705	0.12676
543683	4263673	543682.72_4263672.62	0.10676	0.08504	0.10224	0.07947	0.1408
543703	4263673	543702.72_4263672.62	0.12099	0.09828	0.11344	0.09279	0.15653
543723	4263673	543722.72_4263672.62	0.13692	0.11222	0.12567	0.10941	0.17406
543743	4263673	543742.72_4263672.62	0.15265	0.12537	0.13765	0.12795	0.18948
543763	4263673	543762.72_4263672.62	0.17602	0.14218	0.15613	0.14845	0.2106
543783	4263673	543782.72_4263672.62	0.20599	0.16014	0.18226	0.16597	0.23673
543803	4263673	543802.72_4263672.62	0.24005	0.17968	0.21221	0.17985	0.26487
543823	4263673	543822.72_4263672.62	0.27882	0.20425	0.24702	0.19952	0.29631
543843	4263673	543842.72_4263672.62	0.3224	0.23589	0.28931	0.23083	0.33107
543863	4263673	543862.72_4263672.62	0.3713	0.2747	0.33686	0.27052	0.36844
543883	4263673	543882.72_4263672.62	0.4364	0.32452	0.39287	0.32388	0.4164
543903	4263673	543902.72_4263672.62	0.53698	0.39849	0.48482	0.41056	0.50066
543923	4263673	543922.72_4263672.62	0.64554	0.47729	0.58354	0.50781	0.58398
544043	4263673	544042.72_4263672.62	1.87148	1.5613	1.59495	1.89503	1.52383
544063	4263673	544062.72_4263672.62	1.95936	2.06173	1.89798	2.45652	1.91954
544083	4263673	544082.72_4263672.62	1.91922	2.33409	1.98087	2.71918	2.29727
543363	4263693	543362.72_4263692.62	0.029	0.02431	0.02868	0.02361	0.05009
543383	4263693	543382.72_4263692.62	0.03112	0.02602	0.03028	0.02508	0.05335
543403	4263693	543402.72_4263692.62	0.03344	0.02777	0.0321	0.02673	0.05706
543423	4263693	543422.72_4263692.62	0.03603	0.02953	0.03358	0.02852	0.06048
543443	4263693	543442.72_4263692.62	0.03753	0.0311	0.03462	0.03001	0.06285
543463	4263693	543462.72_4263692.62	0.0406	0.03334	0.03655	0.03219	0.0669
543483	4263693	543482.72_4263692.62	0.04455	0.03628	0.03937	0.03524	0.07188
543503	4263693	543502.72_4263692.62	0.04761	0.03879	0.04166	0.03813	0.0758
543523	4263693	543522.72_4263692.62	0.04932	0.04057	0.04351	0.04137	0.07812
543543	4263693	543542.72_4263692.62	0.05229	0.043	0.04626	0.04452	0.0812

543563	4263693	543562.72_4263692.62	0.05678	0.04613	0.05107	0.04831	0.08632
543583	4263693	543582.72_4263692.62	0.06331	0.05036	0.05756	0.05168	0.09306
543603	4263693	543602.72_4263692.62	0.07104	0.05521	0.06633	0.05437	0.10113
543623	4263693	543622.72_4263692.62	0.07999	0.06209	0.07681	0.05658	0.11101
543643	4263693	543642.72_4263692.62	0.08992	0.07015	0.08721	0.06204	0.1233
543663	4263693	543662.72_4263692.62	0.10412	0.08169	0.10043	0.07337	0.13917
543683	4263693	543682.72_4263692.62	0.11717	0.09246	0.11153	0.0853	0.1535
543703	4263693	543702.72_4263692.62	0.13063	0.10425	0.12279	0.09815	0.16881
543723	4263693	543722.72_4263692.62	0.14876	0.11968	0.13734	0.11475	0.18855
543743	4263693	543742.72_4263692.62	0.17011	0.13673	0.15258	0.13547	0.20983
543763	4263693	543762.72_4263692.62	0.19627	0.15545	0.17302	0.16047	0.23364
543783	4263693	543782.72_4263692.62	0.22782	0.17495	0.20043	0.18292	0.2602
543803	4263693	543802.72_4263692.62	0.27157	0.19966	0.24019	0.2039	0.29758
543823	4263693	543822.72_4263692.62	0.31259	0.22464	0.27729	0.22215	0.33082
543843	4263693	543842.72_4263692.62	0.3558	0.25588	0.31871	0.25141	0.36343
543863	4263693	543862.72_4263692.62	0.40485	0.29546	0.36631	0.29138	0.39835
543883	4263693	543882.72_4263692.62	0.47354	0.34901	0.42627	0.3482	0.44724
543923	4263693	543922.72_4263692.62	0.79566	0.55373	0.69443	0.59932	0.69341
543943	4263693	543942.72_4263692.62	1.00302	0.6769	0.83901	0.75588	0.82001
544043	4263693	544042.72_4263692.62	2.03547	1.74888	1.75581	2.12764	1.71188
544063	4263693	544062.72_4263692.62	2.11581	2.3097	2.06915	2.76471	2.19311
544083	4263693	544082.72_4263692.62	2.0027	2.72866	2.16962	3.1229	2.83676
543363	4263713	543362.72_4263712.62	0.02939	0.02475	0.02919	0.02548	0.05121
543383	4263713	543382.72_4263712.62	0.03164	0.02653	0.03105	0.02628	0.05477
543403	4263713	543402.72_4263712.62	0.03474	0.02855	0.03345	0.02774	0.05946
543423	4263713	543422.72_4263712.62	0.03734	0.03063	0.03584	0.02945	0.06358
543443	4263713	543442.72_4263712.62	0.03943	0.03198	0.03711	0.03102	0.06631
543463	4263713	543462.72_4263712.62	0.04317	0.03459	0.03934	0.03346	0.07109
543483	4263713	543482.72_4263712.62	0.04706	0.03727	0.04253	0.03659	0.07622
543503	4263713	543502.72_4263712.62	0.05103	0.04054	0.04507	0.03949	0.0809
543523	4263713	543522.72_4263712.62	0.05322	0.04234	0.04686	0.04151	0.08382
543543	4263713	543542.72_4263712.62	0.05657	0.0451	0.04937	0.04525	0.08752
543563	4263713	543562.72_4263712.62	0.06148	0.04858	0.05434	0.05011	0.09301
543583	4263713	543582.72_4263712.62	0.06844	0.05357	0.06151	0.05632	0.10025
543603	4263713	543602.72_4263712.62	0.07641	0.05909	0.07091	0.0604	0.10933
543623	4263713	543622.72_4263712.62	0.08583	0.06585	0.08141	0.0637	0.12041
543643	4263713	543642.72_4263712.62	0.09822	0.07456	0.09342	0.06833	0.13382
543663	4263713	543662.72_4263712.62	0.11336	0.08663	0.10771	0.07781	0.15092
543683	4263713	543682.72_4263712.62	0.12994	0.10054	0.12349	0.09365	0.17021
543703	4263713	543702.72_4263712.62	0.14595	0.11419	0.13718	0.10943	0.18762
543723	4263713	543722.72_4263712.62	0.1633	0.12851	0.15047	0.12369	0.20592
543743	4263713	543742.72_4263712.62	0.1896	0.1483	0.16942	0.14473	0.23233
543763	4263713	543762.72_4263712.62	0.21784	0.16877	0.19096	0.17131	0.25788
543783	4263713	543782.72_4263712.62	0.25773	0.19416	0.2257	0.20415	0.29268
543803	4263713	543802.72_4263712.62	0.30577	0.22153	0.27102	0.23183	0.33428
543823	4263713	543822.72_4263712.62	0.34928	0.24703	0.31059	0.24902	0.36842
543843	4263713	543842.72_4263712.62	0.3963	0.2797	0.35445	0.27697	0.40278

543863	4263713	543862.72_4263712.62	0.45513	0.32382	0.40819	0.32166	0.44192
543883	4263713	543882.72_4263712.62	0.51887	0.3781	0.46708	0.37763	0.48522
543943	4263713	543942.72_4263712.62	1.33329	0.82381	1.06211	0.9421	1.00076
543963	4263713	543962.72_4263712.62	1.49089	0.97646	1.19476	1.1272	1.11125
544003	4263713	544002.72_4263712.62	1.75345	1.31148	1.41167	1.57811	1.37455
544023	4263713	544022.72_4263712.62	2.03183	1.68601	1.74212	2.0471	1.67248
544043	4263713	544042.72_4263712.62	2.23915	2.06458	2.00138	2.51635	1.9956
544063	4263713	544062.72_4263712.62	2.27334	2.64124	2.27272	3.16743	2.57647
544083	4263713	544082.72_4263712.62	2.12387	3.25554	2.35748	3.52754	3.46428
544223	4263713	544222.72_4263712.62	1.61948	2.62293	1.87889	2.84886	23.97811
544243	4263713	544242.72_4263712.62	1.54426	2.43934	1.76185	2.63732	16.63941
543363	4263733	543362.72_4263732.62	0.0299	0.02546	0.02946	0.02724	0.05269
543383	4263733	543382.72_4263732.62	0.03234	0.02723	0.03187	0.02833	0.05674
543403	4263733	543402.72_4263732.62	0.03554	0.02935	0.03497	0.02958	0.06175
543423	4263733	543422.72_4263732.62	0.03933	0.03182	0.0376	0.0311	0.06716
543443	4263733	543442.72_4263732.62	0.04218	0.03358	0.04027	0.03248	0.07074
543463	4263733	543462.72_4263732.62	0.04575	0.03632	0.0426	0.0347	0.07557
543483	4263733	543482.72_4263732.62	0.04959	0.03935	0.04531	0.03801	0.08084
543503	4263733	543502.72_4263732.62	0.05378	0.04226	0.04851	0.04116	0.08641
543523	4263733	543522.72_4263732.62	0.0569	0.04476	0.05071	0.04385	0.08982
543543	4263733	543542.72_4263732.62	0.06075	0.04737	0.0533	0.04726	0.09411
543563	4263733	543562.72_4263732.62	0.06628	0.05164	0.05883	0.05207	0.10053
543583	4263733	543582.72_4263732.62	0.07342	0.05638	0.06587	0.05808	0.10879
543603	4263733	543602.72_4263732.62	0.08236	0.06207	0.07509	0.06442	0.11896
543623	4263733	543622.72_4263732.62	0.09375	0.06933	0.08746	0.07027	0.13105
543643	4263733	543642.72_4263732.62	0.10609	0.07844	0.10031	0.07537	0.14513
543663	4263733	543662.72_4263732.62	0.12262	0.09078	0.116	0.08331	0.16363
543683	4263733	543682.72_4263732.62	0.14431	0.10814	0.13488	0.10072	0.18802
543703	4263733	543702.72_4263732.62	0.17078	0.12853	0.15724	0.12642	0.21687
543723	4263733	543722.72_4263732.62	0.18943	0.14375	0.17242	0.14237	0.23603
543743	4263733	543742.72_4263732.62	0.21465	0.1626	0.19113	0.16001	0.26088
543763	4263733	543762.72_4263732.62	0.24795	0.18631	0.21659	0.18706	0.29211
543783	4263733	543782.72_4263732.62	0.29273	0.21553	0.25615	0.22712	0.33229
543803	4263733	543802.72_4263732.62	0.34951	0.24763	0.30914	0.2663	0.38061
543823	4263733	543822.72_4263732.62	0.40778	0.27991	0.36213	0.29211	0.42797
543843	4263733	543842.72_4263732.62	0.44695	0.30747	0.39674	0.30832	0.44939
543863	4263733	543862.72_4263732.62	0.50606	0.35363	0.45306	0.35312	0.48799
543883	4263733	543882.72_4263732.62	0.58408	0.4185	0.526	0.42157	0.54241
543943	4263733	543942.72_4263732.62	1.47221	0.91522	1.17181	1.04783	1.09636
543963	4263733	543962.72_4263732.62	1.89821	1.27405	1.58125	1.48773	1.3664
543983	4263733	543982.72_4263732.62	2.01429	1.46492	1.67998	1.75544	1.49722
544003	4263733	544002.72_4263732.62	2.15019	1.70994	1.82423	2.07347	1.68792
544023	4263733	544022.72_4263732.62	2.39561	2.10773	2.09458	2.5628	2.00312
544043	4263733	544042.72_4263732.62	2.4823	2.5806	2.34828	3.14603	2.44678
544063	4263733	544062.72_4263732.62	2.41442	3.1143	2.523	3.7133	3.18002
544203	4263733	544202.72_4263732.62	1.77372	2.96343	2.07398	3.23216	23.57311
544223	4263733	544222.72_4263732.62	1.68553	2.72819	1.93036	2.96376	16.44393

544243	4263733	544242.72_4263732.62	1.6031	2.54918	1.81074	2.74334	12.61319
544263	4263733	544262.72_4263732.62	1.52235	2.38833	1.69814	2.53728	10.08399
543363	4263753	543362.72_4263752.62	0.03051	0.02573	0.02972	0.02798	0.05445
543383	4263753	543382.72_4263752.62	0.03282	0.02759	0.03218	0.0298	0.05831
543403	4263753	543402.72_4263752.62	0.03585	0.02971	0.03477	0.03143	0.06295
543423	4263753	543422.72_4263752.62	0.03984	0.03244	0.03916	0.03319	0.06895
543443	4263753	543442.72_4263752.62	0.04405	0.03584	0.04263	0.03512	0.07513
543463	4263753	543462.72_4263752.62	0.04779	0.03836	0.04541	0.03687	0.08046
543483	4263753	543482.72_4263752.62	0.052	0.04106	0.04834	0.03921	0.08617
543503	4263753	543502.72_4263752.62	0.05671	0.04411	0.05177	0.04244	0.0927
543523	4263753	543522.72_4263752.62	0.06056	0.04665	0.0544	0.04512	0.09702
543543	4263753	543542.72_4263752.62	0.06521	0.04983	0.05794	0.04854	0.10238
543563	4263753	543562.72_4263752.62	0.07204	0.05392	0.06328	0.05308	0.10977
543583	4263753	543582.72_4263752.62	0.08006	0.059	0.07074	0.05891	0.11888
543603	4263753	543602.72_4263752.62	0.08981	0.065	0.08117	0.06623	0.12963
543623	4263753	543622.72_4263752.62	0.10152	0.0724	0.09322	0.07434	0.14274
543643	4263753	543642.72_4263752.62	0.11683	0.08222	0.10819	0.0826	0.15958
543663	4263753	543662.72_4263752.62	0.13625	0.09607	0.1268	0.09213	0.18126
543683	4263753	543682.72_4263752.62	0.16129	0.11485	0.14837	0.10779	0.20877
543703	4263753	543702.72_4263752.62	0.19408	0.13921	0.17663	0.13695	0.2449
543723	4263753	543722.72_4263752.62	0.22594	0.16312	0.20443	0.16691	0.27938
543743	4263753	543742.72_4263752.62	0.24978	0.18191	0.22293	0.1841	0.30234
543763	4263753	543762.72_4263752.62	0.28412	0.20611	0.24877	0.20828	0.33397
543783	4263753	543782.72_4263752.62	0.33368	0.23843	0.29142	0.25098	0.37855
543803	4263753	543802.72_4263752.62	0.40665	0.28011	0.35919	0.30885	0.44389
543823	4263753	543822.72_4263752.62	0.51204	0.33048	0.44977	0.36625	0.53342
543963	4263753	543962.72_4263752.62	2.30196	1.58094	1.92459	1.8536	1.6016
543983	4263753	543982.72_4263752.62	2.46253	1.91809	2.12599	2.30762	1.81777
544003	4263753	544002.72_4263752.62	2.58282	2.24946	2.28989	2.72929	2.07214
544023	4263753	544022.72_4263752.62	2.68558	2.71862	2.52978	3.30912	2.48494
544043	4263753	544042.72_4263752.62	2.658	3.26957	2.73391	3.96753	3.15043
544183	4263753	544182.72_4263752.62	1.95344	3.38141	2.30449	3.70475	23.14424
544203	4263753	544202.72_4263752.62	1.85644	3.12819	2.16003	3.41886	16.78294
544223	4263753	544222.72_4263752.62	1.75668	2.87714	1.99998	3.11441	12.71025
544243	4263753	544242.72_4263752.62	1.66111	2.66593	1.85762	2.84741	10.14954
544263	4263753	544262.72_4263752.62	1.56841	2.47266	1.72509	2.60228	8.30696
543363	4263773	543362.72_4263772.62	0.03115	0.02576	0.03023	0.02687	0.05652
543383	4263773	543382.72_4263772.62	0.03385	0.02784	0.03269	0.02969	0.06062
543403	4263773	543402.72_4263772.62	0.03635	0.02992	0.03563	0.03217	0.0647
543423	4263773	543422.72_4263772.62	0.04002	0.03254	0.03854	0.03463	0.07006
543443	4263773	543442.72_4263772.62	0.04436	0.03605	0.04324	0.03729	0.07666
543463	4263773	543462.72_4263772.62	0.04897	0.03961	0.04694	0.03965	0.0838
543483	4263773	543482.72_4263772.62	0.05397	0.04316	0.05099	0.04206	0.09138
543503	4263773	543502.72_4263772.62	0.05959	0.04669	0.05525	0.04486	0.09915
543523	4263773	543522.72_4263772.62	0.06463	0.04948	0.05892	0.04736	0.10515
543543	4263773	543542.72_4263772.62	0.07048	0.0528	0.06328	0.05074	0.11194
543563	4263773	543562.72_4263772.62	0.07769	0.05692	0.06921	0.05501	0.12017

543583	4263773	543582.72_4263772.62	0.0865	0.06194	0.07718	0.06029	0.13003
543603	4263773	543602.72_4263772.62	0.09738	0.06803	0.08728	0.06722	0.14184
543623	4263773	543622.72_4263772.62	0.11129	0.07591	0.10087	0.0766	0.15692
543643	4263773	543642.72_4263772.62	0.12965	0.08671	0.11858	0.08842	0.17706
543663	4263773	543662.72_4263772.62	0.15459	0.10214	0.1412	0.10223	0.20437
543683	4263773	543682.72_4263772.62	0.18685	0.12372	0.16968	0.1204	0.24018
543703	4263773	543702.72_4263772.62	0.22406	0.1506	0.20303	0.14948	0.2819
543723	4263773	543722.72_4263772.62	0.26479	0.18015	0.23967	0.18891	0.32753
543743	4263773	543742.72_4263772.62	0.29268	0.20291	0.26277	0.21429	0.35429
543763	4263773	543762.72_4263772.62	0.33282	0.23096	0.29361	0.24177	0.39229
543783	4263773	543782.72_4263772.62	0.37783	0.26174	0.33008	0.27619	0.42984
543803	4263773	543802.72_4263772.62	0.46562	0.31059	0.40789	0.34533	0.50674
543823	4263773	543822.72_4263772.62	0.66112	0.38875	0.54913	0.45491	0.65877
543843	4263773	543842.72_4263772.62	0.74335	0.43501	0.61831	0.48608	0.71176
543963	4263773	543962.72_4263772.62	2.60638	1.95686	2.30578	2.30183	1.87868
543983	4263773	543982.72_4263772.62	2.78772	2.62206	2.69553	3.15651	2.29589
544003	4263773	544002.72_4263772.62	2.86199	3.08152	2.86882	3.73635	2.6852
544023	4263773	544022.72_4263772.62	2.86008	3.56989	3.01743	4.33677	3.27041
544183	4263773	544182.72_4263772.62	2.05207	3.59035	2.41198	3.94764	16.67929
544203	4263773	544202.72_4263772.62	1.94018	3.31151	2.24426	3.60979	12.93352
544223	4263773	544222.72_4263772.62	1.82607	3.02941	2.06311	3.25828	10.3185
544243	4263773	544242.72_4263772.62	1.7148	2.76768	1.89034	2.93243	8.40318
543363	4263793	543362.72_4263792.62	0.03166	0.0253	0.03075	0.02437	0.05825
543383	4263793	543382.72_4263792.62	0.0347	0.02779	0.03379	0.0277	0.06333
543403	4263793	543402.72_4263792.62	0.03785	0.03021	0.03641	0.03105	0.06794
543423	4263793	543422.72_4263792.62	0.04064	0.03258	0.03907	0.03427	0.07223
543443	4263793	543442.72_4263792.62	0.04463	0.03601	0.04313	0.03798	0.07809
543463	4263793	543462.72_4263792.62	0.04908	0.03973	0.04741	0.04151	0.08531
543483	4263793	543482.72_4263792.62	0.05444	0.04396	0.05188	0.04498	0.09395
543503	4263793	543502.72_4263792.62	0.06118	0.04891	0.05732	0.04902	0.1043
543523	4263793	543522.72_4263792.62	0.06811	0.05311	0.06265	0.05217	0.11359
543543	4263793	543542.72_4263792.62	0.07533	0.05688	0.06808	0.05518	0.12234
543563	4263793	543562.72_4263792.62	0.08401	0.06126	0.07491	0.05929	0.13244
543583	4263793	543582.72_4263792.62	0.09402	0.06626	0.08363	0.0641	0.14335
543603	4263793	543602.72_4263792.62	0.10628	0.07238	0.09511	0.07015	0.15647
543623	4263793	543622.72_4263792.62	0.12297	0.08075	0.11068	0.07904	0.17443
543643	4263793	543642.72_4263792.62	0.1459	0.09249	0.13132	0.09263	0.19905
543663	4263793	543662.72_4263792.62	0.17795	0.1098	0.16013	0.11233	0.23425
543683	4263793	543682.72_4263792.62	0.21881	0.13398	0.19783	0.13759	0.28071
543703	4263793	543702.72_4263792.62	0.26585	0.16406	0.23999	0.17116	0.33514
543723	4263793	543722.72_4263792.62	0.31107	0.19549	0.27838	0.20965	0.38343
543743	4263793	543742.72_4263792.62	0.34606	0.224	0.30871	0.24439	0.41746
543763	4263793	543762.72_4263792.62	0.40831	0.26311	0.35589	0.28986	0.47705
543783	4263793	543782.72_4263792.62	0.4461	0.29288	0.38641	0.31693	0.50571
543803	4263793	543802.72_4263792.62	0.52947	0.341	0.45692	0.37912	0.57239
543823	4263793	543822.72_4263792.62	0.72956	0.423	0.60092	0.49888	0.7195
543843	4263793	543842.72_4263792.62	1.09842	0.56127	0.84603	0.67058	0.94549

543863	4263793	543862.72_4263792.62	1.20173	0.62247	0.92149	0.71755	0.99712
543923	4263793	543922.72_4263792.62	2.15745	1.26161	1.75214	1.47653	1.51114
543943	4263793	543942.72_4263792.62	2.66476	1.73391	2.23117	2.02085	1.81285
543963	4263793	543962.72_4263792.62	2.95753	2.4841	2.7893	2.93624	2.25515
543983	4263793	543982.72_4263792.62	2.95406	3.37755	3.20367	4.06214	2.88936
544003	4263793	544002.72_4263792.62	3.02533	3.92794	3.35348	4.74398	3.46554
544023	4263793	544022.72_4263792.62	2.93968	4.86548	3.49314	5.48953	4.6738
544203	4263793	544202.72_4263792.62	2.01904	3.47636	2.30601	3.76838	10.40972
543363	4263813	543362.72_4263812.62	0.03202	0.02452	0.03123	0.02224	0.05971
543383	4263813	543382.72_4263812.62	0.03526	0.02717	0.03433	0.02501	0.06534
543403	4263813	543402.72_4263812.62	0.03887	0.02995	0.0378	0.02841	0.07104
543423	4263813	543422.72_4263812.62	0.04209	0.03295	0.04067	0.03249	0.07555
543443	4263813	543442.72_4263812.62	0.04562	0.03605	0.04445	0.03666	0.08124
543463	4263813	543462.72_4263812.62	0.05008	0.04	0.04835	0.04157	0.08864
543483	4263813	543482.72_4263812.62	0.05554	0.04481	0.05317	0.047	0.09787
543503	4263813	543502.72_4263812.62	0.06243	0.05052	0.05879	0.05294	0.10891
543523	4263813	543522.72_4263812.62	0.07046	0.05626	0.06528	0.05812	0.12059
543543	4263813	543542.72_4263812.62	0.07921	0.06145	0.07228	0.06241	0.13186
543563	4263813	543562.72_4263812.62	0.08956	0.06667	0.08038	0.06663	0.14421
543583	4263813	543582.72_4263812.62	0.10164	0.07223	0.09026	0.07133	0.15798
543603	4263813	543602.72_4263812.62	0.1165	0.07876	0.10355	0.07718	0.17397
543623	4263813	543622.72_4263812.62	0.1363	0.08747	0.12171	0.08488	0.19484
543643	4263813	543642.72_4263812.62	0.16343	0.09958	0.14598	0.09737	0.22361
543663	4263813	543662.72_4263812.62	0.19945	0.11713	0.17815	0.11962	0.26333
543683	4263813	543682.72_4263812.62	0.24437	0.14118	0.22	0.15138	0.31527
543703	4263813	543702.72_4263812.62	0.29812	0.17137	0.26634	0.18614	0.37524
543723	4263813	543722.72_4263812.62	0.36854	0.21031	0.32114	0.23336	0.44776
543743	4263813	543742.72_4263812.62	0.43737	0.2508	0.37397	0.2859	0.51276
543763	4263813	543762.72_4263812.62	0.52026	0.29788	0.43249	0.34661	0.58457
543783	4263813	543782.72_4263812.62	0.54613	0.32987	0.45895	0.37297	0.60511
543803	4263813	543802.72_4263812.62	0.61859	0.3772	0.52052	0.42506	0.65783
543823	4263813	543822.72_4263812.62	0.86009	0.47382	0.68629	0.56452	0.8216
543843	4263813	543842.72_4263812.62	1.36215	0.70142	1.07767	0.85577	1.13348
543863	4263813	543862.72_4263812.62	1.77451	0.90492	1.3766	1.06334	1.32007
543883	4263813	543882.72_4263812.62	2.09751	1.15726	1.71444	1.34833	1.50865
543903	4263813	543902.72_4263812.62	2.42621	1.42006	2.05234	1.66706	1.68496
543923	4263813	543922.72_4263812.62	2.76439	1.7831	2.43967	2.0893	1.91213
543943	4263813	543942.72_4263812.62	3.08495	2.31639	2.85669	2.70529	2.22819
543963	4263813	543962.72_4263812.62	3.18657	3.23386	3.38453	3.847	2.80992
543983	4263813	543982.72_4263812.62	3.17945	4.50379	3.71674	5.02845	3.6477
544003	4263813	544002.72_4263812.62	3.20151	5.2472	3.88217	5.94736	4.74849
544023	4263813	544022.72_4263812.62	3.19192	5.81304	3.91966	6.62747	6.54426
544043	4263813	544042.72_4263812.62	3.13822	6.18066	3.85429	6.91646	9.57097
543363	4263833	543362.72_4263832.62	0.03241	0.02373	0.03165	0.0214	0.06139
543383	4263833	543382.72_4263832.62	0.03574	0.0263	0.03473	0.02349	0.06729
543403	4263833	543402.72_4263832.62	0.04005	0.0297	0.03843	0.027	0.07378
543423	4263833	543422.72_4263832.62	0.04362	0.0328	0.04238	0.03021	0.07981

543443	4263833	543442.72_4263832.62	0.04728	0.03599	0.0459	0.03407	0.08568
543463	4263833	543462.72_4263832.62	0.05164	0.04	0.04997	0.03918	0.0932
543483	4263833	543482.72_4263832.62	0.05719	0.04518	0.05469	0.04587	0.10277
543503	4263833	543502.72_4263832.62	0.06414	0.05165	0.06038	0.05392	0.1143
543523	4263833	543522.72_4263832.62	0.07188	0.05781	0.06683	0.06142	0.12601
543543	4263833	543542.72_4263832.62	0.08102	0.06416	0.07447	0.0677	0.1383
543563	4263833	543562.72_4263832.62	0.09229	0.07083	0.08368	0.07397	0.1527
543583	4263833	543582.72_4263832.62	0.10687	0.07829	0.09505	0.08127	0.17012
543603	4263833	543602.72_4263832.62	0.12477	0.08643	0.10974	0.08766	0.18993
543623	4263833	543622.72_4263832.62	0.14686	0.09514	0.12974	0.09466	0.21314
543643	4263833	543642.72_4263832.62	0.17483	0.10637	0.1555	0.10431	0.24271
543663	4263833	543662.72_4263832.62	0.21268	0.12262	0.18943	0.12271	0.2837
543683	4263833	543682.72_4263832.62	0.25076	0.14172	0.2242	0.14858	0.32633
543703	4263833	543702.72_4263832.62	0.28987	0.16406	0.26002	0.17534	0.36869
543723	4263833	543722.72_4263832.62	0.37071	0.20641	0.32709	0.22673	0.45603
543743	4263833	543742.72_4263832.62	0.50129	0.26348	0.41825	0.30779	0.57682
543763	4263833	543762.72_4263832.62	0.67344	0.34053	0.52906	0.41451	0.71233
543783	4263833	543782.72_4263832.62	0.69377	0.37363	0.55391	0.44271	0.73128
543803	4263833	543802.72_4263832.62	0.85975	0.45312	0.66493	0.54152	0.84443
543823	4263833	543822.72_4263832.62	1.19605	0.60512	0.91743	0.74279	1.05778
543843	4263833	543842.72_4263832.62	1.70634	0.91702	1.39311	1.12059	1.35286
543863	4263833	543862.72_4263832.62	2.04399	1.2014	1.78339	1.42044	1.58315
543883	4263833	543882.72_4263832.62	2.37095	1.51645	2.19377	1.76516	1.81666
543903	4263833	543902.72_4263832.62	2.63936	2.00536	2.74037	2.333	2.14368
543923	4263833	543922.72_4263832.62	2.94372	2.56448	3.23514	2.97612	2.50048
543943	4263833	543942.72_4263832.62	3.18343	3.33654	3.68719	3.86081	3.00531
543963	4263833	543962.72_4263832.62	3.35548	4.56567	4.0609	5.03952	3.7341
543983	4263833	543982.72_4263832.62	3.45927	5.55446	4.31189	6.30066	4.91304
544003	4263833	544002.72_4263832.62	3.52283	6.37658	4.40476	7.33399	6.60324
544023	4263833	544022.72_4263832.62	3.52487	6.95923	4.38821	7.97897	9.46584
544043	4263833	544042.72_4263832.62	3.47961	7.25008	4.30761	8.2205	15.25457
544083	4263833	544082.72_4263832.62	3.20336	6.65984	3.89222	7.57194	30.84931
543363	4263853	543362.72_4263852.62	0.03315	0.02327	0.03216	0.02127	0.06377
543383	4263853	543382.72_4263852.62	0.03667	0.02553	0.03507	0.0231	0.06955
543403	4263853	543402.72_4263852.62	0.0408	0.0289	0.03885	0.02621	0.07645
543423	4263853	543422.72_4263852.62	0.045	0.03206	0.04315	0.02891	0.08352
543443	4263853	543442.72_4263852.62	0.04901	0.03546	0.04732	0.03205	0.09047
543463	4263853	543462.72_4263852.62	0.0534	0.03937	0.05167	0.03611	0.09802
543483	4263853	543482.72_4263852.62	0.0588	0.04435	0.05652	0.04186	0.10723
543503	4263853	543502.72_4263852.62	0.06549	0.05073	0.06204	0.04992	0.11865
543523	4263853	543522.72_4263852.62	0.07319	0.05749	0.06829	0.05907	0.13087
543543	4263853	543542.72_4263852.62	0.08272	0.06513	0.07614	0.06866	0.14454
543563	4263853	543562.72_4263852.62	0.09449	0.07344	0.08623	0.07843	0.16051
543583	4263853	543582.72_4263852.62	0.1092	0.08294	0.09808	0.08871	0.17872
543603	4263853	543602.72_4263852.62	0.12845	0.09263	0.11297	0.09829	0.20095
543623	4263853	543622.72_4263852.62	0.15113	0.10225	0.1321	0.10672	0.22531
543643	4263853	543642.72_4263852.62	0.17979	0.11341	0.15838	0.11547	0.2554

543663	4263853	543662.72_4263852.62	0.20795	0.12447	0.1849	0.12381	0.28373
543683	4263853	543682.72_4263852.62	0.23083	0.13502	0.20504	0.13294	0.30531
543703	4263853	543702.72_4263852.62	0.27565	0.15623	0.24444	0.15793	0.35275
543743	4263853	543742.72_4263852.62	0.47428	0.24994	0.4118	0.28197	0.56403
543763	4263853	543762.72_4263852.62	0.66596	0.32914	0.5366	0.39633	0.72273
543783	4263853	543782.72_4263852.62	0.93166	0.4504	0.71278	0.55866	0.91747
543803	4263853	543802.72_4263852.62	1.11436	0.54863	0.8456	0.67649	1.03909
543823	4263853	543822.72_4263852.62	1.44465	0.74379	1.14319	0.91759	1.25163
543843	4263853	543842.72_4263852.62	1.88803	0.99141	1.52682	1.218	1.47468
543863	4263853	543862.72_4263852.62	2.19866	1.07421	1.68906	1.30849	1.58122
543883	4263853	543882.72_4263852.62	2.669	1.44767	2.22197	1.71448	1.87202
543903	4263853	543902.72_4263852.62	3.15788	2.02108	2.9221	2.37384	2.24924
543923	4263853	543922.72_4263852.62	3.42366	2.85308	3.66551	3.35957	2.77721
543943	4263853	543942.72_4263852.62	3.61291	4.28505	4.28216	4.66894	3.54415
543963	4263853	543962.72_4263852.62	3.76093	5.5934	4.74096	6.30745	4.77624
543983	4263853	543982.72_4263852.62	3.88197	6.83119	4.94609	7.8656	6.53273
544003	4263853	544002.72_4263852.62	3.93455	7.82347	4.97831	9.04432	9.51401
544023	4263853	544022.72_4263852.62	3.90851	8.42799	4.89729	9.63516	16.0635
544063	4263853	544062.72_4263852.62	3.66067	8.0431	4.50198	9.27392	30.39568
544083	4263853	544082.72_4263852.62	3.47412	7.45726	4.23375	8.60465	20.95615
543363	4263873	543362.72_4263872.62	0.03381	0.02301	0.03283	0.02089	0.06678
543383	4263873	543382.72_4263872.62	0.03709	0.02491	0.03537	0.02266	0.07188
543403	4263873	543402.72_4263872.62	0.04123	0.02801	0.03907	0.02557	0.07883
543423	4263873	543422.72_4263872.62	0.04571	0.03097	0.04333	0.02813	0.08633
543443	4263873	543442.72_4263872.62	0.05024	0.03431	0.04778	0.03096	0.09423
543463	4263873	543462.72_4263872.62	0.05461	0.0378	0.05225	0.03398	0.10157
543483	4263873	543482.72_4263872.62	0.06008	0.04249	0.05773	0.03827	0.11095
543503	4263873	543502.72_4263872.62	0.06739	0.04904	0.06438	0.04539	0.12369
543523	4263873	543522.72_4263872.62	0.07594	0.05672	0.0715	0.05448	0.138
543543	4263873	543542.72_4263872.62	0.08576	0.06489	0.07914	0.0653	0.15278
543563	4263873	543562.72_4263872.62	0.09785	0.07443	0.08922	0.07816	0.16999
543583	4263873	543582.72_4263872.62	0.11169	0.08467	0.10101	0.09115	0.18761
543603	4263873	543602.72_4263872.62	0.13121	0.0966	0.1165	0.10525	0.21127
543623	4263873	543622.72_4263872.62	0.15226	0.10741	0.13299	0.11639	0.23424
543643	4263873	543642.72_4263872.62	0.17604	0.11793	0.15375	0.12578	0.25869
543663	4263873	543662.72_4263872.62	0.20075	0.12788	0.17767	0.13302	0.28261
543683	4263873	543682.72_4263872.62	0.22863	0.13922	0.20372	0.14064	0.30937
543703	4263873	543702.72_4263872.62	0.28305	0.16162	0.24984	0.16124	0.3665
543743	4263873	543742.72_4263872.62	0.45573	0.24104	0.40439	0.26162	0.55272
543763	4263873	543762.72_4263872.62	0.61744	0.30822	0.52523	0.35568	0.70143
543783	4263873	543782.72_4263872.62	0.927	0.42853	0.71729	0.5331	0.92958
543803	4263873	543802.72_4263872.62	1.2646	0.5984	0.96491	0.74809	1.16468
543823	4263873	543822.72_4263872.62	1.58344	0.78285	1.23995	0.97291	1.36059
543843	4263873	543842.72_4263872.62	1.72478	0.82143	1.31358	1.02209	1.3998
543863	4263873	543862.72_4263872.62	2.11465	1.00645	1.61587	1.24394	1.59229
543883	4263873	543882.72_4263872.62	2.70548	1.33922	2.13932	1.63081	1.90032
543903	4263873	543902.72_4263872.62	3.58319	1.99244	3.01635	2.36284	2.37194

544003	4263873	544002.72_4263872.62	4.45786	9.68607	5.68362	11.3368	15.10372
544043	4263873	544042.72_4263872.62	4.22694	9.88174	5.27893	11.59593	30.21127
544063	4263873	544062.72_4263872.62	4.01176	9.22328	4.96526	10.83242	21.02915
543363	4263893	543362.72_4263892.62	0.03482	0.02288	0.03333	0.02013	0.07005
543383	4263893	543382.72_4263892.62	0.03749	0.02452	0.03574	0.02177	0.07462
543403	4263893	543402.72_4263892.62	0.04156	0.02735	0.03955	0.0244	0.08139
543423	4263893	543422.72_4263892.62	0.04641	0.03014	0.04372	0.02702	0.08956
543443	4263893	543442.72_4263892.62	0.05196	0.0335	0.04863	0.03007	0.09891
543463	4263893	543462.72_4263892.62	0.05697	0.03727	0.05345	0.0333	0.10744
543483	4263893	543482.72_4263892.62	0.063	0.04192	0.05942	0.03777	0.11775
543503	4263893	543502.72_4263892.62	0.0702	0.04737	0.06673	0.04289	0.13033
543523	4263893	543522.72_4263892.62	0.07961	0.05472	0.07517	0.05048	0.14589
543543	4263893	543542.72_4263892.62	0.09021	0.06337	0.08393	0.06063	0.16315
543563	4263893	543562.72_4263892.62	0.10328	0.07419	0.09422	0.07415	0.18239
543623	4263893	543622.72_4263892.62	0.15578	0.10997	0.13714	0.12075	0.24687
543643	4263893	543642.72_4263892.62	0.17809	0.12223	0.15505	0.13395	0.27024
543663	4263893	543662.72_4263892.62	0.20303	0.13423	0.17786	0.145	0.29444
543683	4263893	543682.72_4263892.62	0.23558	0.14861	0.20872	0.15779	0.32627
543703	4263893	543702.72_4263892.62	0.29979	0.17512	0.26466	0.18323	0.39436
543723	4263893	543722.72_4263892.62	0.37816	0.20676	0.33343	0.21516	0.48027
543743	4263893	543742.72_4263892.62	0.4731	0.24577	0.41791	0.26324	0.57843
543763	4263893	543762.72_4263892.62	0.64819	0.31227	0.55694	0.35834	0.7423
543783	4263893	543782.72_4263892.62	0.87328	0.40026	0.70825	0.48207	0.91586
543803	4263893	543802.72_4263892.62	1.03778	0.48876	0.83029	0.58701	1.03018
543823	4263893	543822.72_4263892.62	1.34248	0.6289	1.04094	0.76002	1.21507
543843	4263893	543842.72_4263892.62	1.75233	0.81452	1.33659	1.00549	1.43738
543863	4263893	543862.72_4263892.62	2.29326	1.05972	1.74192	1.3186	1.71001
543883	4263893	543882.72_4263892.62	3.3522	1.51556	2.48311	1.87952	2.15662
543903	4263893	543902.72_4263892.62	4.17086	2.27542	3.50535	2.7416	2.72055
544023	4263893	544022.72_4263892.62	4.93044	12.27003	6.26482	14.73638	31.88451
544043	4263893	544042.72_4263892.62	4.69448	11.72693	5.93139	14.0684	21.37284
544183	4263893	544182.72_4263892.62	2.56065	4.6362	2.88992	5.09969	5.81831
544223	4263893	544222.72_4263892.62	2.12965	3.52309	2.38902	3.76417	4.56936
543363	4263913	543362.72_4263912.62	0.03529	0.02295	0.03381	0.01973	0.07345
543383	4263913	543382.72_4263912.62	0.03795	0.02471	0.03634	0.02116	0.07781
543403	4263913	543402.72_4263912.62	0.04214	0.02714	0.04005	0.02328	0.085
543423	4263913	543422.72_4263912.62	0.04751	0.02984	0.04467	0.02576	0.09393
543443	4263913	543442.72_4263912.62	0.05382	0.03305	0.05007	0.02914	0.10426
543463	4263913	543462.72_4263912.62	0.06037	0.03742	0.056	0.03277	0.11524
543483	4263913	543482.72_4263912.62	0.06688	0.04139	0.06228	0.03644	0.12654
543503	4263913	543502.72_4263912.62	0.07422	0.04626	0.06945	0.04093	0.13929
543523	4263913	543522.72_4263912.62	0.08391	0.05259	0.07862	0.04708	0.15526
543543	4263913	543542.72_4263912.62	0.09474	0.06036	0.08869	0.05522	0.17309
543663	4263913	543662.72_4263912.62	0.21023	0.13796	0.18282	0.15055	0.31412
543683	4263913	543682.72_4263912.62	0.25217	0.15957	0.22021	0.17562	0.35712
543703	4263913	543702.72_4263912.62	0.32366	0.19207	0.285	0.21268	0.43434
543723	4263913	543722.72_4263912.62	0.40101	0.22409	0.35304	0.2455	0.51663

543743	4263913	543742.72_4263912.62	0.48715	0.25816	0.42792	0.27895	0.60166
543763	4263913	543762.72_4263912.62	0.59316	0.30163	0.52416	0.32362	0.69845
543783	4263913	543782.72_4263912.62	0.75349	0.36661	0.66054	0.40085	0.83935
543843	4263913	543842.72_4263912.62	1.91763	0.84683	1.47263	1.03949	1.56555
543863	4263913	543862.72_4263912.62	2.66536	1.17235	2.02112	1.4832	1.94029
543883	4263913	543882.72_4263912.62	3.89103	1.68597	2.85939	2.13161	2.44595
544003	4263913	544002.72_4263912.62	5.81479	15.36407	7.54766	18.96774	31.10021
544023	4263913	544022.72_4263912.62	5.56289	15.16443	7.17494	18.72618	22.38578
544043	4263913	544042.72_4263912.62	5.18842	13.75093	6.57628	16.82862	16.30737
544163	4263913	544162.72_4263912.62	2.88682	5.45316	3.28968	6.04447	5.86468
544183	4263913	544182.72_4263912.62	2.61073	4.68825	2.96732	5.10274	5.21849
544203	4263913	544202.72_4263912.62	2.3656	4.05675	2.67646	4.35087	4.65711
544223	4263913	544222.72_4263912.62	2.14871	3.53824	2.41251	3.74552	4.16531
543363	4263933	543362.72_4263932.62	0.03573	0.02399	0.03341	0.0203	0.07756
543383	4263933	543382.72_4263932.62	0.03854	0.02543	0.03629	0.02146	0.08218
543403	4263933	543402.72_4263932.62	0.04289	0.02751	0.04034	0.02314	0.08951
543423	4263933	543422.72_4263932.62	0.04863	0.03012	0.04545	0.02529	0.09901
543443	4263933	543442.72_4263932.62	0.05568	0.03379	0.05176	0.0289	0.11007
543463	4263933	543462.72_4263932.62	0.0631	0.03749	0.0587	0.0318	0.12264
543483	4263933	543482.72_4263932.62	0.07055	0.04129	0.06542	0.03505	0.13541
543503	4263933	543502.72_4263932.62	0.07959	0.04587	0.07339	0.03902	0.15018
543523	4263933	543522.72_4263932.62	0.08902	0.05129	0.08277	0.04385	0.16652
543663	4263933	543662.72_4263932.62	0.2191	0.13471	0.19134	0.13962	0.3362
543683	4263933	543682.72_4263932.62	0.26672	0.16141	0.23039	0.17467	0.38742
543703	4263933	543702.72_4263932.62	0.33181	0.19473	0.28932	0.21719	0.45597
543723	4263933	543722.72_4263932.62	0.40242	0.22876	0.35275	0.25675	0.52727
543743	4263933	543742.72_4263932.62	0.4775	0.26239	0.41671	0.2902	0.59561
543763	4263933	543762.72_4263932.62	0.58851	0.30727	0.51542	0.33479	0.69584
543783	4263933	543782.72_4263932.62	0.74137	0.36737	0.65357	0.39754	0.82908
543863	4263933	543862.72_4263932.62	3.0571	1.25252	2.31664	1.59877	2.18398
543883	4263933	543882.72_4263932.62	4.18979	1.82328	3.25208	2.35849	2.76014
544023	4263933	544022.72_4263932.62	6.23562	18.33901	8.07177	23.33987	17.0789
544123	4263933	544122.72_4263932.62	3.67568	7.82944	4.26932	8.99752	6.69198
544143	4263933	544142.72_4263932.62	3.28351	6.53404	3.77852	7.324	5.91213
544163	4263933	544162.72_4263932.62	2.94019	5.50802	3.35389	6.04915	5.2608
544183	4263933	544182.72_4263932.62	2.64241	4.71044	2.99283	5.10086	4.71513
544203	4263933	544202.72_4263932.62	2.38279	4.07314	2.67297	4.35805	4.23886
543363	4263953	543362.72_4263952.62	0.03624	0.0252	0.03265	0.02186	0.08253
543383	4263953	543382.72_4263952.62	0.039	0.02654	0.03556	0.02286	0.08707
543403	4263953	543402.72_4263952.62	0.04337	0.02851	0.03965	0.02435	0.09428
543423	4263953	543422.72_4263952.62	0.04918	0.031	0.04498	0.02745	0.10378
543443	4263953	543442.72_4263952.62	0.05631	0.0349	0.05181	0.02992	0.11546
543463	4263953	543462.72_4263952.62	0.06437	0.03831	0.05961	0.0327	0.12891
543483	4263953	543482.72_4263952.62	0.07346	0.04206	0.06764	0.03571	0.14334
543503	4263953	543502.72_4263952.62	0.0835	0.04654	0.0769	0.03931	0.16066
543523	4263953	543522.72_4263952.62	0.0914	0.05077	0.08434	0.04279	0.17434
543543	4263953	543542.72_4263952.62	0.10323	0.05671	0.09508	0.04764	0.19413

543663	4263953	543662.72_4263952.62	0.22386	0.12464	0.19888	0.11644	0.35295
543683	4263953	543682.72_4263952.62	0.26572	0.14799	0.23228	0.14446	0.39862
543703	4263953	543702.72_4263952.62	0.32684	0.17977	0.28294	0.18454	0.46127
543723	4263953	543722.72_4263952.62	0.39526	0.21601	0.34475	0.23008	0.5291
543743	4263953	543742.72_4263952.62	0.47895	0.25816	0.41701	0.28071	0.60726
543763	4263953	543762.72_4263952.62	0.58118	0.30533	0.5045	0.33312	0.69347
543783	4263953	543782.72_4263952.62	0.75806	0.37706	0.66165	0.41402	0.84815
543863	4263953	543862.72_4263952.62	3.62601	1.3466	2.74509	1.7499	2.52937
543883	4263953	543882.72_4263952.62	5.61767	2.17867	4.22094	2.91841	3.43552
543903	4263953	543902.72_4263952.62	7.27301	4.24066	6.9183	5.48039	5.0737
543923	4263953	543922.72_4263952.62	7.69936	8.54513	9.88091	11.30942	8.47838
544103	4263953	544102.72_4263952.62	4.27133	9.82203	5.01947	11.53596	6.74562
544123	4263953	544122.72_4263952.62	3.7738	8.02293	4.38721	9.16798	5.97151
544143	4263953	544142.72_4263952.62	3.34342	6.62882	3.83548	7.41014	5.31963
543363	4263973	543362.72_4263972.62	0.03745	0.02724	0.03195	0.02451	0.08864
543383	4263973	543382.72_4263972.62	0.03956	0.0284	0.03452	0.02533	0.09257
543403	4263973	543402.72_4263972.62	0.04373	0.03026	0.03835	0.02681	0.09942
543423	4263973	543422.72_4263972.62	0.04893	0.03329	0.04353	0.02977	0.10854
543443	4263973	543442.72_4263972.62	0.05572	0.03651	0.05009	0.03239	0.12008
543463	4263973	543462.72_4263972.62	0.06395	0.03998	0.058	0.0354	0.13412
543483	4263973	543482.72_4263972.62	0.07355	0.0438	0.06683	0.03862	0.14941
543503	4263973	543502.72_4263972.62	0.08386	0.04815	0.07673	0.04223	0.16704
543523	4263973	543522.72_4263972.62	0.0943	0.05281	0.08676	0.046	0.18487
543543	4263973	543542.72_4263972.62	0.10589	0.05814	0.09694	0.05028	0.20431
543583	4263973	543582.72_4263972.62	0.13532	0.07195	0.12325	0.06137	0.25129
543643	4263973	543642.72_4263972.62	0.20208	0.10382	0.17958	0.0889	0.34175
543663	4263973	543662.72_4263972.62	0.22859	0.11742	0.20404	0.10192	0.37144
543683	4263973	543682.72_4263972.62	0.26813	0.13674	0.23786	0.12124	0.41496
543703	4263973	543702.72_4263972.62	0.32771	0.16469	0.28749	0.15113	0.47846
543723	4263973	543722.72_4263972.62	0.4007	0.19925	0.35035	0.19053	0.54956
543743	4263973	543742.72_4263972.62	0.48689	0.24174	0.42561	0.24109	0.63031
543763	4263973	543762.72_4263972.62	0.59958	0.2954	0.52135	0.30526	0.72865
543783	4263973	543782.72_4263972.62	0.79041	0.37624	0.6845	0.40307	0.89366
543803	4263973	543802.72_4263972.62	1.13693	0.50602	0.99509	0.56327	1.19985
543863	4263973	543862.72_4263972.62	4.59239	1.52228	3.48285	2.05656	3.11369
543883	4263973	543882.72_4263972.62	7.16095	2.78238	5.8885	3.83294	4.54351
543903	4263973	543902.72_4263972.62	8.44406	6.07353	9.90821	8.24516	7.35741
543923	4263973	543922.72_4263972.62	9.61097	12.75073	13.16978	17.35746	13.20897
544063	4263973	544062.72_4263972.62	5.795	16.36913	7.03483	20.56789	7.84352
544083	4263973	544082.72_4263972.62	5.03487	12.80126	6.00011	15.56683	6.83376
544103	4263973	544102.72_4263972.62	4.38772	10.13212	5.1427	11.92259	6.03586
544123	4263973	544122.72_4263972.62	3.84518	8.20292	4.44686	9.41939	5.39724
543363	4263993	543362.72_4263992.62	0.03823	0.03078	0.0325	0.02858	0.09543
543383	4263993	543382.72_4263992.62	0.0405	0.03158	0.03429	0.02925	0.09946
543403	4263993	543402.72_4263992.62	0.04389	0.03332	0.0375	0.03073	0.1056
543423	4263993	543422.72_4263992.62	0.04856	0.0356	0.0422	0.03298	0.1139
543443	4263993	543442.72_4263992.62	0.05466	0.0389	0.04792	0.03569	0.12505

543463	4263993	543462.72_4263992.62	0.06227	0.04236	0.05506	0.03889	0.13852
543483	4263993	543482.72_4263992.62	0.07184	0.04637	0.06366	0.04254	0.15433
543503	4263993	543502.72_4263992.62	0.08235	0.05088	0.07374	0.04657	0.17246
543523	4263993	543522.72_4263992.62	0.09443	0.05608	0.08568	0.05118	0.19294
543543	4263993	543542.72_4263992.62	0.10763	0.06188	0.09787	0.05619	0.21506
543563	4263993	543562.72_4263992.62	0.12233	0.06845	0.11083	0.06173	0.23937
543583	4263993	543582.72_4263992.62	0.13954	0.07618	0.12576	0.06823	0.26697
543603	4263993	543602.72_4263992.62	0.16159	0.08584	0.14488	0.07642	0.30141
543623	4263993	543622.72_4263992.62	0.18801	0.0972	0.16709	0.08609	0.34009
543643	4263993	543642.72_4263992.62	0.21086	0.10752	0.18595	0.09433	0.36942
543663	4263993	543662.72_4263992.62	0.23837	0.11973	0.21044	0.10445	0.40127
543683	4263993	543682.72_4263992.62	0.27756	0.13634	0.24594	0.11893	0.44494
543703	4263993	543702.72_4263992.62	0.33352	0.15927	0.29434	0.13984	0.50472
543723	4263993	543722.72_4263992.62	0.40971	0.19003	0.36115	0.16939	0.58141
543743	4263993	543742.72_4263992.62	0.51068	0.23108	0.44979	0.21103	0.67745
543783	4263993	543782.72_4263992.62	0.87804	0.37652	0.76091	0.37722	1.01175
543843	4263993	543842.72_4263992.62	3.64781	1.09725	2.77806	1.38487	2.76256
543863	4263993	543862.72_4263992.62	6.43101	1.79374	4.70269	2.47063	4.05115
543883	4263993	543882.72_4263992.62	8.87367	3.8372	8.81519	5.2715	6.45247
543903	4263993	543902.72_4263992.62	10.66746	7.79265	13.81904	11.35488	10.97385
543363	4264013	543362.72_4264012.62	0.03844	0.03348	0.0325	0.03174	0.1014
543383	4264013	543382.72_4264012.62	0.04179	0.03544	0.03525	0.03358	0.10836
543403	4264013	543402.72_4264012.62	0.0449	0.03719	0.03789	0.03514	0.1142
543423	4264013	543422.72_4264012.62	0.04864	0.03924	0.04121	0.03698	0.12123
543443	4264013	543442.72_4264012.62	0.05359	0.04188	0.04572	0.03944	0.13066
543463	4264013	543462.72_4264012.62	0.06025	0.04529	0.05191	0.04268	0.14322
543483	4264013	543482.72_4264012.62	0.06919	0.04951	0.05997	0.04672	0.15909
543503	4264013	543502.72_4264012.62	0.07903	0.05412	0.0691	0.05104	0.17637
543523	4264013	543522.72_4264012.62	0.09103	0.05963	0.08059	0.0562	0.19714
543543	4264013	543542.72_4264012.62	0.10721	0.06677	0.09568	0.06301	0.22459
543563	4264013	543562.72_4264012.62	0.12575	0.07498	0.11273	0.07073	0.25539
543583	4264013	543582.72_4264012.62	0.14607	0.08413	0.13062	0.07927	0.28865
543603	4264013	543602.72_4264012.62	0.17462	0.09659	0.15462	0.09149	0.33469
543623	4264013	543622.72_4264012.62	0.20131	0.10845	0.17704	0.10245	0.37547
543643	4264013	543642.72_4264012.62	0.22189	0.11823	0.19465	0.11007	0.40323
543663	4264013	543662.72_4264012.62	0.25031	0.13079	0.21835	0.12052	0.43886
543683	4264013	543682.72_4264012.62	0.29094	0.14742	0.25424	0.13493	0.48644
543703	4264013	543702.72_4264012.62	0.3492	0.16989	0.30578	0.15492	0.55118
543843	4264013	543842.72_4264012.62	4.89266	1.26689	3.6491	1.61543	3.59087
543863	4264013	543862.72_4264012.62	8.41184	2.33799	6.86265	3.13652	5.62958
543883	4264013	543882.72_4264012.62	11.04747	4.7708	12.71253	6.5507	9.34523
543903	4264013	543902.72_4264012.62	14.15976	10.05442	20.63669	15.79038	19.67801
544283	4264013	544282.72_4264012.62	1.72375	2.83055	1.82032	3.05859	2.24156
544303	4264013	544302.72_4264012.62	1.60024	2.57688	1.69704	2.7669	2.07159
544323	4264013	544322.72_4264012.62	1.49234	2.36028	1.59263	2.52055	1.91781
543363	4264033	543362.72_4264032.62	0.03874	0.03605	0.03262	0.03499	0.10646
543383	4264033	543382.72_4264032.62	0.04203	0.03831	0.03531	0.03719	0.11429

543403	4264033	543402.72_4264032.62	0.04619	0.04105	0.03867	0.03987	0.12384
543423	4264033	543422.72_4264032.62	0.0498	0.0433	0.04171	0.042	0.13127
543443	4264033	543442.72_4264032.62	0.05386	0.04575	0.04515	0.0443	0.13932
543463	4264033	543462.72_4264032.62	0.0594	0.049	0.04994	0.04742	0.15045
543483	4264033	543482.72_4264032.62	0.06814	0.05374	0.05751	0.05208	0.16752
543503	4264033	543502.72_4264032.62	0.07655	0.05823	0.06535	0.0564	0.18298
543523	4264033	543522.72_4264032.62	0.08944	0.06472	0.07743	0.06272	0.20654
543543	4264033	543542.72_4264032.62	0.10572	0.07252	0.09226	0.07048	0.23496
543563	4264033	543562.72_4264032.62	0.12709	0.08237	0.11168	0.08043	0.271
543583	4264033	543582.72_4264032.62	0.15546	0.09521	0.13722	0.09373	0.31846
543603	4264033	543602.72_4264032.62	0.18835	0.10995	0.16562	0.10966	0.37239
543623	4264033	543622.72_4264032.62	0.21584	0.12297	0.18857	0.12257	0.41512
543643	4264033	543642.72_4264032.62	0.23954	0.13488	0.20845	0.13297	0.4488
543843	4264033	543842.72_4264032.62	6.98114	1.59821	4.97248	2.04832	4.85139
543863	4264033	543862.72_4264032.62	10.46979	3.44108	10.54161	4.45203	8.33743
543883	4264033	543882.72_4264032.62	14.5557	6.28934	18.7094	8.58206	14.98181
544283	4264033	544282.72_4264032.62	1.77102	2.85815	1.90685	3.08301	2.13105
544303	4264033	544302.72_4264032.62	1.64503	2.59659	1.77949	2.7866	1.97486
544323	4264033	544322.72_4264032.62	1.5334	2.36515	1.66081	2.52568	1.82874
543363	4264053	543362.72_4264052.62	0.03951	0.03834	0.03333	0.0382	0.11049
543383	4264053	543382.72_4264052.62	0.04315	0.04123	0.03618	0.04112	0.12028
543403	4264053	543402.72_4264052.62	0.04714	0.04427	0.03933	0.04412	0.13063
543423	4264053	543422.72_4264052.62	0.05194	0.04775	0.04311	0.04755	0.14263
543443	4264053	543442.72_4264052.62	0.05646	0.05087	0.04687	0.05056	0.1529
543463	4264053	543462.72_4264052.62	0.06098	0.05386	0.05073	0.0534	0.16235
543483	4264053	543482.72_4264052.62	0.06755	0.05805	0.05619	0.05747	0.17629
543503	4264053	543502.72_4264052.62	0.07639	0.06345	0.06366	0.06274	0.19462
543523	4264053	543522.72_4264052.62	0.08942	0.07087	0.07501	0.07012	0.2204
543543	4264053	543542.72_4264052.62	0.10666	0.07998	0.09024	0.07943	0.25236
543563	4264053	543562.72_4264052.62	0.13042	0.09174	0.11131	0.09162	0.29416
543623	4264053	543622.72_4264052.62	0.23102	0.13968	0.19999	0.14305	0.46146
543643	4264053	543642.72_4264052.62	0.26043	0.15511	0.22503	0.15763	0.50485
543823	4264053	543822.72_4264052.62	5.07269	1.34524	3.71372	1.71697	4.36982
543843	4264053	543842.72_4264052.62	9.06124	2.3981	7.13387	3.08804	7.01859
543863	4264053	543862.72_4264052.62	13.41522	4.70964	14.73943	6.02361	12.60289
544303	4264053	544302.72_4264052.62	1.68688	2.57632	1.84341	2.72083	1.87946
543363	4264073	543362.72_4264072.62	0.04023	0.03959	0.0346	0.03972	0.1112
543383	4264073	543382.72_4264072.62	0.04447	0.04333	0.03792	0.04358	0.12382
543403	4264073	543402.72_4264072.62	0.04894	0.04712	0.04132	0.04735	0.13658
543423	4264073	543422.72_4264072.62	0.05407	0.05131	0.04519	0.0515	0.15073
543443	4264073	543442.72_4264072.62	0.06009	0.05594	0.04971	0.05612	0.16664
543463	4264073	543462.72_4264072.62	0.06518	0.05983	0.05393	0.05974	0.1792
543483	4264073	543482.72_4264072.62	0.07245	0.06505	0.05972	0.06481	0.19663
543503	4264073	543502.72_4264072.62	0.08174	0.07137	0.06711	0.07103	0.21759
543523	4264073	543522.72_4264072.62	0.09323	0.07876	0.0764	0.07838	0.24185
543543	4264073	543542.72_4264072.62	0.11111	0.08935	0.09067	0.08937	0.27771
543823	4264073	543822.72_4264072.62	7.186	1.98015	5.14369	2.49221	6.26939

543843	4264073	543842.72_4264072.62	12.00762	3.50756	10.27725	4.28264	10.60108
543363	4264093	543362.72_4264092.62	0.04163	0.04052	0.03683	0.04011	0.11196
543383	4264093	543382.72_4264092.62	0.0458	0.04429	0.0403	0.04374	0.12437
543403	4264093	543402.72_4264092.62	0.05056	0.04855	0.04413	0.04789	0.1382
543423	4264093	543422.72_4264092.62	0.05606	0.05337	0.04842	0.0526	0.15415
543443	4264093	543442.72_4264092.62	0.06312	0.05923	0.0537	0.05849	0.17375
543463	4264093	543462.72_4264092.62	0.07121	0.06561	0.05961	0.06502	0.19536
543483	4264093	543482.72_4264092.62	0.08012	0.07246	0.06617	0.07199	0.21819
543503	4264093	543502.72_4264092.62	0.08843	0.07894	0.07269	0.07813	0.23854
543523	4264093	543522.72_4264092.62	0.10101	0.08799	0.0821	0.08725	0.26758
543543	4264093	543542.72_4264092.62	0.11894	0.09997	0.09542	0.09976	0.30642
544003	4264093	544002.72_4264092.62	13.59666	98.14277	20.33136	193.90487	6.34525
544023	4264093	544022.72_4264092.62	10.48669	49.76579	14.44671	71.83954	5.58559
544183	4264093	544182.72_4264092.62	2.98307	5.26493	3.38913	5.80135	2.67508
544203	4264093	544202.72_4264092.62	2.69289	4.56629	3.05266	4.97825	2.48385
544223	4264093	544222.72_4264092.62	2.44483	3.98836	2.75237	4.29947	2.30483
544243	4264093	544242.72_4264092.62	2.23102	3.50798	2.48657	3.7367	2.13778
544263	4264093	544262.72_4264092.62	2.04711	3.12586	2.2682	3.2922	1.98854
544283	4264093	544282.72_4264092.62	1.88712	2.81284	2.08367	2.93054	1.85341
544303	4264093	544302.72_4264092.62	1.74545	2.53756	1.91376	2.61437	1.72525
543363	4264113	543362.72_4264112.62	0.04344	0.04089	0.03938	0.03978	0.11308
543383	4264113	543382.72_4264112.62	0.04798	0.04542	0.04334	0.04344	0.12599
543403	4264113	543402.72_4264112.62	0.05325	0.05013	0.04784	0.04783	0.14105
543423	4264113	543422.72_4264112.62	0.05948	0.05568	0.05295	0.05314	0.15875
543443	4264113	543442.72_4264112.62	0.0669	0.06208	0.05883	0.05945	0.17929
543463	4264113	543462.72_4264112.62	0.07495	0.06884	0.06505	0.0662	0.20102
543483	4264113	543482.72_4264112.62	0.08595	0.07764	0.07324	0.07541	0.22944
543503	4264113	543502.72_4264112.62	0.09835	0.08732	0.08232	0.08553	0.26017
543523	4264113	543522.72_4264112.62	0.11358	0.09885	0.09342	0.09774	0.29621
543703	4264113	543702.72_4264112.62	0.88932	0.48443	0.66223	0.60592	1.56946
543723	4264113	543722.72_4264112.62	1.23376	0.61092	0.89357	0.77124	2.01712
543743	4264113	543742.72_4264112.62	1.83573	0.80878	1.28758	1.02018	2.72038
544003	4264113	544002.72_4264112.62	13.99361	81.63632	21.17866	116.05642	5.7874
544023	4264113	544022.72_4264112.62	10.70054	46.13698	14.90093	57.12458	5.13668
544043	4264113	544042.72_4264112.62	8.50836	27.86013	11.13771	32.93198	4.59617
544163	4264113	544162.72_4264112.62	3.38733	6.07767	3.90378	6.72968	2.73467
544183	4264113	544182.72_4264112.62	3.02839	5.18975	3.44767	5.69944	2.535
544203	4264113	544202.72_4264112.62	2.72924	4.51154	3.08769	4.92143	2.3583
544223	4264113	544222.72_4264112.62	2.47353	3.94677	2.77236	4.27751	2.19288
544243	4264113	544242.72_4264112.62	2.25259	3.46717	2.49162	3.73121	2.03632
544263	4264113	544262.72_4264112.62	2.06454	3.1021	2.27755	3.31832	1.90102
544283	4264113	544282.72_4264112.62	1.89978	2.78719	2.086	2.95907	1.77379
544303	4264113	544302.72_4264112.62	1.75495	2.51771	1.91748	2.6494	1.65561
544323	4264113	544322.72_4264112.62	1.62724	2.28853	1.77114	2.38478	1.54728
543363	4264133	543362.72_4264132.62	0.0463	0.04312	0.04257	0.04023	0.11691
543383	4264133	543382.72_4264132.62	0.05121	0.04747	0.04686	0.04415	0.13031
543403	4264133	543402.72_4264132.62	0.0569	0.05255	0.05177	0.04889	0.14588

543423	4264133	543422.72_4264132.62	0.0639	0.0588	0.05765	0.05494	0.16499
543443	4264133	543442.72_4264132.62	0.07203	0.0659	0.06434	0.06211	0.18677
543463	4264133	543462.72_4264132.62	0.07953	0.07249	0.07053	0.06881	0.20666
543483	4264133	543482.72_4264132.62	0.09169	0.08257	0.08015	0.07972	0.23749
543503	4264133	543502.72_4264132.62	0.10635	0.09439	0.09148	0.09293	0.27321
543523	4264133	543522.72_4264132.62	0.1244	0.10849	0.10533	0.10921	0.31528
543543	4264133	543542.72_4264132.62	0.14835	0.12641	0.12367	0.13126	0.36844
543723	4264133	543722.72_4264132.62	1.46925	0.71328	1.04452	0.88254	2.40718
543743	4264133	543742.72_4264132.62	2.22179	0.96665	1.54036	1.16672	3.39004
543763	4264133	543762.72_4264132.62	3.1106	1.23332	2.15954	1.43311	4.52842
543783	4264133	543782.72_4264132.62	5.35207	1.75075	3.44763	1.96837	6.7874
544023	4264133	544022.72_4264132.62	10.79684	39.37515	15.14729	45.12219	4.75405
544043	4264133	544042.72_4264132.62	8.60528	25.48417	11.40125	28.37171	4.28655
544063	4264133	544062.72_4264132.62	7.07398	17.69183	9.02672	19.3339	3.89105
544143	4264133	544142.72_4264132.62	3.85969	6.88323	4.5303	7.41152	2.79279
544163	4264133	544162.72_4264132.62	3.41698	5.85289	3.96032	6.32878	2.5914
544183	4264133	544182.72_4264132.62	3.04855	5.02874	3.48195	5.4379	2.40574
544203	4264133	544202.72_4264132.62	2.7409	4.38043	3.09673	4.72665	2.23856
544223	4264133	544222.72_4264132.62	2.48059	3.85606	2.77903	4.15081	2.08644
544243	4264133	544242.72_4264132.62	2.25887	3.4328	2.51946	3.69066	1.94905
544263	4264133	544262.72_4264132.62	2.0669	3.07273	2.29356	3.30128	1.82114
544283	4264133	544282.72_4264132.62	1.89883	2.75724	2.09025	2.95925	1.70031
544303	4264133	544302.72_4264132.62	1.75215	2.49318	1.91801	2.67157	1.59
544323	4264133	544322.72_4264132.62	1.62232	2.26082	1.76301	2.41455	1.4864
544343	4264133	544342.72_4264132.62	1.50926	2.07759	1.64193	2.20983	1.39711
543363	4264153	543362.72_4264152.62	0.04997	0.04593	0.04608	0.04246	0.12285
543383	4264153	543382.72_4264152.62	0.05544	0.05082	0.05075	0.04724	0.13724
543403	4264153	543402.72_4264152.62	0.06154	0.05632	0.05596	0.05285	0.15307
543423	4264153	543422.72_4264152.62	0.06908	0.06309	0.06229	0.05994	0.17285
543443	4264153	543442.72_4264152.62	0.07796	0.07089	0.06968	0.06847	0.19561
543463	4264153	543462.72_4264152.62	0.08646	0.07838	0.07682	0.07674	0.21721
543483	4264153	543482.72_4264152.62	0.09996	0.08977	0.08788	0.08978	0.25023
543503	4264153	543502.72_4264152.62	0.11648	0.10328	0.10117	0.10578	0.28925
543523	4264153	543522.72_4264152.62	0.13719	0.11963	0.11772	0.12591	0.33593
543543	4264153	543542.72_4264152.62	0.1625	0.139	0.13807	0.15042	0.39069
543563	4264153	543562.72_4264152.62	0.19851	0.16513	0.16727	0.18498	0.46612
543583	4264153	543582.72_4264152.62	0.24059	0.19437	0.2014	0.22325	0.55107
543603	4264153	543602.72_4264152.62	0.29437	0.22935	0.24498	0.26925	0.65582
543623	4264153	543622.72_4264152.62	0.37029	0.27382	0.30486	0.32922	0.79644
543643	4264153	543642.72_4264152.62	0.47873	0.33034	0.38661	0.40446	0.98541
543743	4264153	543742.72_4264152.62	2.47678	1.04613	1.71802	1.18577	3.96114
543763	4264153	543762.72_4264152.62	3.69754	1.42469	2.52926	1.5595	5.77106
543783	4264153	543782.72_4264152.62	6.57408	2.04293	4.06599	2.17646	9.26144
543803	4264153	543802.72_4264152.62	11.92103	3.14942	8.0805	3.3345	18.97271
544043	4264153	544042.72_4264152.62	8.62301	22.77128	11.58017	24.67482	4.01038
544063	4264153	544062.72_4264152.62	7.08748	16.35863	9.13369	17.56134	3.65603
544083	4264153	544082.72_4264152.62	5.96034	12.28051	7.47074	12.93161	3.35272

544223	4264153	544222.72_4264152.62	2.47219	3.74188	2.80651	3.94767	1.99438
544243	4264153	544242.72_4264152.62	2.2497	3.35628	2.54635	3.54002	1.86691
544263	4264153	544262.72_4264152.62	2.05703	3.02054	2.31625	3.1865	1.74771
544283	4264153	544282.72_4264152.62	1.8878	2.71564	2.10314	2.86897	1.63389
544303	4264153	544302.72_4264152.62	1.73946	2.45037	1.91561	2.59605	1.52755
544323	4264153	544322.72_4264152.62	1.61033	2.23335	1.76245	2.3758	1.43267
544343	4264153	544342.72_4264152.62	1.4972	2.05393	1.63609	2.19429	1.34832
543363	4264173	543362.72_4264172.62	0.0546	0.05011	0.05003	0.04764	0.1311
543383	4264173	543382.72_4264172.62	0.06049	0.05545	0.05507	0.05345	0.14572
543403	4264173	543402.72_4264172.62	0.067	0.06133	0.0606	0.05997	0.16197
543423	4264173	543422.72_4264172.62	0.07591	0.06924	0.06811	0.06889	0.18407
543443	4264173	543442.72_4264172.62	0.08538	0.07748	0.07615	0.07834	0.20727
543463	4264173	543462.72_4264172.62	0.0969	0.08732	0.08592	0.08962	0.23493
543483	4264173	543482.72_4264172.62	0.11051	0.09872	0.0975	0.10274	0.26684
543503	4264173	543502.72_4264172.62	0.12918	0.11369	0.11307	0.12064	0.30898
543523	4264173	543522.72_4264172.62	0.15628	0.13425	0.13552	0.14725	0.36686
543543	4264173	543542.72_4264172.62	0.18397	0.15465	0.15894	0.17225	0.42412
543563	4264173	543562.72_4264172.62	0.21581	0.17729	0.18613	0.19899	0.48807
543583	4264173	543582.72_4264172.62	0.26293	0.20828	0.22585	0.23854	0.57838
543603	4264173	543602.72_4264172.62	0.32176	0.24397	0.27505	0.28426	0.68701
543623	4264173	543622.72_4264172.62	0.39581	0.2853	0.33641	0.33602	0.81937
543643	4264173	543642.72_4264172.62	0.50242	0.33864	0.42195	0.40078	1.00362
543663	4264173	543662.72_4264172.62	0.71613	0.42592	0.57385	0.50633	1.34638
543683	4264173	543682.72_4264172.62	1.01717	0.5363	0.77321	0.62477	1.80476
544043	4264173	544042.72_4264172.62	8.53222	19.91011	11.45803	20.95182	3.76364
544063	4264173	544062.72_4264172.62	6.99927	14.9919	9.00155	15.874	3.44544
544083	4264173	544082.72_4264172.62	5.87696	11.47014	7.31738	12.12745	3.1624
544223	4264173	544222.72_4264172.62	2.4481	3.56635	2.78573	3.68166	1.90785
544243	4264173	544242.72_4264172.62	2.22705	3.21662	2.5256	3.32948	1.78783
544263	4264173	544262.72_4264172.62	2.03516	2.90687	2.29304	3.00535	1.67511
544283	4264173	544282.72_4264172.62	1.8673	2.62889	2.08313	2.71187	1.56882
544303	4264173	544302.72_4264172.62	1.72302	2.40726	1.91733	2.48303	1.47531
544323	4264173	544322.72_4264172.62	1.59299	2.18822	1.75074	2.26166	1.38266
544343	4264173	544342.72_4264172.62	1.47924	2.00626	1.61279	2.08425	1.29975
543363	4264193	543362.72_4264192.62	0.06077	0.05604	0.05516	0.05611	0.14206
543383	4264193	543382.72_4264192.62	0.06686	0.06151	0.06048	0.06231	0.15674
543403	4264193	543402.72_4264192.62	0.07439	0.06816	0.06705	0.06984	0.17461
543423	4264193	543422.72_4264192.62	0.08459	0.07686	0.07596	0.07994	0.1984
543443	4264193	543442.72_4264192.62	0.09561	0.08608	0.08564	0.09043	0.22393
543463	4264193	543462.72_4264192.62	0.10789	0.09616	0.09652	0.10162	0.25208
543483	4264193	543482.72_4264192.62	0.12303	0.10815	0.10982	0.11501	0.28581
543503	4264193	543502.72_4264192.62	0.14224	0.12275	0.12657	0.13159	0.32711
543523	4264193	543522.72_4264192.62	0.17252	0.14439	0.15273	0.15915	0.38847
543543	4264193	543542.72_4264192.62	0.21022	0.16967	0.1853	0.19189	0.46158
543563	4264193	543562.72_4264192.62	0.25278	0.19629	0.22167	0.22539	0.54124
543583	4264193	543582.72_4264192.62	0.30377	0.2258	0.26469	0.26164	0.63372
543603	4264193	543602.72_4264192.62	0.37034	0.26119	0.32023	0.30333	0.7508

543623	4264193	543622.72_4264192.62	0.45938	0.30439	0.39332	0.35048	0.90329
543643	4264193	543642.72_4264192.62	0.59142	0.36211	0.4968	0.4097	1.12342
543663	4264193	543662.72_4264192.62	0.82057	0.44897	0.65715	0.49803	1.48796
543683	4264193	543682.72_4264192.62	1.16952	0.57053	0.88137	0.61777	2.02844
543703	4264193	543702.72_4264192.62	1.85295	0.7951	1.29437	0.84637	3.10826
543723	4264193	543722.72_4264192.62	2.52582	1.02262	1.72304	1.0559	4.28015
543883	4264193	543882.72_4264192.62	101.66046	16.844	128.29095	20.25559	9.32337
544023	4264193	544022.72_4264192.62	10.48565	20.76251	14.27693	22.58893	3.86701
544043	4264193	544042.72_4264192.62	8.44342	16.69389	11.2023	17.70135	3.54476
544063	4264193	544062.72_4264192.62	6.89239	13.59726	8.91513	14.08141	3.26075
544223	4264193	544222.72_4264192.62	2.40835	3.33321	2.69446	3.34315	1.8223
544243	4264193	544242.72_4264192.62	2.19212	3.01659	2.44119	3.06297	1.70978
544263	4264193	544262.72_4264192.62	2.00362	2.73756	2.21476	2.79662	1.60348
544283	4264193	544282.72_4264192.62	1.84205	2.51437	2.03535	2.56939	1.50932
544303	4264193	544302.72_4264192.62	1.70002	2.31433	1.87512	2.35618	1.42142
543363	4264213	543362.72_4264212.62	0.06805	0.06282	0.06119	0.0658	0.15432
543383	4264213	543382.72_4264212.62	0.07455	0.0684	0.06701	0.072	0.16925
543403	4264213	543402.72_4264212.62	0.08328	0.07568	0.07481	0.08016	0.18894
543423	4264213	543422.72_4264212.62	0.09484	0.08501	0.08506	0.09073	0.21442
543443	4264213	543442.72_4264212.62	0.1061	0.09389	0.09514	0.10014	0.23962
543463	4264213	543462.72_4264212.62	0.11981	0.10431	0.10731	0.11122	0.26971
543483	4264213	543482.72_4264212.62	0.13723	0.11699	0.12258	0.12512	0.30668
543503	4264213	543502.72_4264212.62	0.15911	0.13215	0.14163	0.14233	0.35138
543523	4264213	543522.72_4264212.62	0.18721	0.15056	0.16598	0.16423	0.40648
543543	4264213	543542.72_4264212.62	0.2378	0.18079	0.20965	0.2051	0.49859
543563	4264213	543562.72_4264212.62	0.29258	0.21021	0.25584	0.24139	0.59464
543583	4264213	543582.72_4264212.62	0.35456	0.24093	0.30767	0.2744	0.702
543603	4264213	543602.72_4264212.62	0.43066	0.27641	0.37094	0.30767	0.83233
543623	4264213	543622.72_4264212.62	0.54136	0.32388	0.45886	0.3518	1.01661
543643	4264213	543642.72_4264212.62	0.69778	0.38703	0.57499	0.41017	1.27394
543663	4264213	543662.72_4264212.62	0.97909	0.48748	0.75884	0.50827	1.7177
543683	4264213	543682.72_4264212.62	1.47282	0.64974	1.05558	0.66877	2.48318
543703	4264213	543702.72_4264212.62	2.11293	0.86784	1.45168	0.87721	3.59763
543723	4264213	543722.72_4264212.62	3.02848	1.16892	2.02931	1.16618	5.31905
543743	4264213	543742.72_4264212.62	4.61745	1.6224	3.06198	1.62221	8.5904
543763	4264213	543762.72_4264212.62	7.67846	2.27942	5.17065	2.31652	16.9293
543803	4264213	543802.72_4264212.62	33.12583	4.60704	25.45177	5.03949	25.73229
543883	4264213	543882.72_4264212.62	82.21845	15.76583	98.39632	18.83009	8.27853
543903	4264213	543902.72_4264212.62	74.1239	19.08354	105.85137	23.01768	7.04667
543923	4264213	543922.72_4264212.62	58.94709	21.7388	93.82153	26.30444	6.12652
544003	4264213	544002.72_4264212.62	12.88677	20.15261	17.04455	22.08249	3.96913
544023	4264213	544022.72_4264212.62	10.25812	16.8876	13.05166	18.2508	3.62581
544043	4264213	544042.72_4264212.62	8.3286	13.98773	10.37407	14.76562	3.32915
544063	4264213	544062.72_4264212.62	6.78494	11.75904	8.56543	12.18005	3.08039
544223	4264213	544222.72_4264212.62	2.36	3.1222	2.61694	3.02185	1.74386
544243	4264213	544242.72_4264212.62	2.15088	2.81894	2.36653	2.76851	1.63805
544263	4264213	544262.72_4264212.62	1.96861	2.56573	2.14803	2.561	1.53914

544283	4264213	544282.72_4264212.62	1.81065	2.35925	1.96752	2.38347	1.44954
543363	4264233	543362.72_4264232.62	0.0792	0.07185	0.07061	0.07828	0.17192
543383	4264233	543382.72_4264232.62	0.08545	0.07687	0.07635	0.08301	0.1862
543403	4264233	543402.72_4264232.62	0.09579	0.08484	0.08564	0.09159	0.20825
543423	4264233	543422.72_4264232.62	0.1081	0.09396	0.09666	0.10149	0.23436
543443	4264233	543442.72_4264232.62	0.11861	0.10155	0.10601	0.10848	0.25806
543463	4264233	543462.72_4264232.62	0.13402	0.11218	0.11951	0.11966	0.29078
543483	4264233	543482.72_4264232.62	0.15458	0.12564	0.13734	0.13479	0.33249
543503	4264233	543502.72_4264232.62	0.17914	0.14087	0.15861	0.15208	0.38106
543523	4264233	543522.72_4264232.62	0.21043	0.15913	0.1858	0.17278	0.44064
543543	4264233	543542.72_4264232.62	0.27719	0.19329	0.24316	0.21663	0.55396
543563	4264233	543562.72_4264232.62	0.34241	0.22315	0.29743	0.24751	0.66375
543583	4264233	543582.72_4264232.62	0.39968	0.25011	0.34597	0.26787	0.76728
543603	4264233	543602.72_4264232.62	0.47612	0.28518	0.4084	0.29604	0.90264
543623	4264233	543622.72_4264232.62	0.58628	0.33386	0.49342	0.33962	1.09306
543643	4264233	543642.72_4264232.62	0.74465	0.40189	0.60853	0.40318	1.36413
543663	4264233	543662.72_4264232.62	1.02382	0.50974	0.79266	0.50636	1.82786
543683	4264233	543682.72_4264232.62	1.64322	0.71246	1.1542	0.70547	2.83034
543703	4264233	543702.72_4264232.62	2.31677	0.94741	1.56852	0.92978	4.10394
543723	4264233	543722.72_4264232.62	3.30127	1.25866	2.19625	1.23959	6.08265
543743	4264233	543742.72_4264232.62	5.72992	1.89662	3.85919	1.91223	12.26268
543783	4264233	543782.72_4264232.62	18.66331	3.67614	13.67421	3.95628	32.71567
543803	4264233	543802.72_4264232.62	32.46762	5.00293	25.96511	5.59597	20.15078
543843	4264233	543842.72_4264232.62	70.93558	9.16033	68.30089	10.67979	10.91743
543863	4264233	543862.72_4264232.62	70.91014	11.74302	75.86607	13.83406	8.84575
543883	4264233	543882.72_4264232.62	64.15593	14.10057	70.69014	16.77847	7.4474
543903	4264233	543902.72_4264232.62	57.37352	16.14828	66.5392	19.37803	6.41604
543923	4264233	543922.72_4264232.62	45.35647	17.80544	55.65614	21.40207	5.62669
543943	4264233	543942.72_4264232.62	32.37104	18.35628	38.49921	22.04603	5.00197
544003	4264233	544002.72_4264232.62	12.09239	16.49676	14.93914	17.87268	3.72384
544023	4264233	544022.72_4264232.62	9.74114	14.16856	11.64003	15.20593	3.41127
544043	4264233	544042.72_4264232.62	7.94553	12.09688	9.50331	12.73156	3.14298
544083	4264233	544082.72_4264232.62	5.33208	8.89966	6.45296	8.95113	2.68984
544103	4264233	544102.72_4264232.62	4.52901	7.2295	5.23102	7.43659	2.47337
544223	4264233	544222.72_4264232.62	2.30475	2.9654	2.57664	2.82873	1.67308
544243	4264233	544242.72_4264232.62	2.10636	2.66675	2.34128	2.53938	1.57546
544263	4264233	544262.72_4264232.62	1.93122	2.41734	2.12436	2.32679	1.48242
544283	4264233	544282.72_4264232.62	1.77904	2.22114	1.94387	2.17496	1.39823
544303	4264233	544302.72_4264232.62	1.64308	2.04625	1.77732	2.03781	1.31736
544323	4264233	544322.72_4264232.62	1.52448	1.90526	1.64245	1.91977	1.24566
543363	4264253	543362.72_4264252.62	0.09482	0.08229	0.08515	0.09275	0.19356
543383	4264253	543382.72_4264252.62	0.1021	0.08761	0.09183	0.09701	0.20993
543403	4264253	543402.72_4264252.62	0.11411	0.0958	0.10259	0.10579	0.23435
543423	4264253	543422.72_4264252.62	0.12845	0.10517	0.11531	0.11613	0.26345
543443	4264253	543442.72_4264252.62	0.13906	0.1121	0.1245	0.12169	0.28831
543463	4264253	543462.72_4264252.62	0.15384	0.12122	0.13733	0.13041	0.32052
543483	4264253	543482.72_4264252.62	0.17594	0.13408	0.15668	0.14428	0.36497

543503	4264253	543502.72_4264252.62	0.19953	0.14722	0.17736	0.15661	0.41257
543523	4264253	543522.72_4264252.62	0.23504	0.16595	0.20882	0.17501	0.48
543543	4264253	543542.72_4264252.62	0.30186	0.19714	0.26644	0.20848	0.59447
543563	4264253	543562.72_4264252.62	0.39123	0.2338	0.33784	0.2452	0.73927
543583	4264253	543582.72_4264252.62	0.45029	0.26239	0.38541	0.26713	0.85327
543603	4264253	543602.72_4264252.62	0.51435	0.29665	0.43536	0.2945	0.98203
543623	4264253	543622.72_4264252.62	0.62891	0.35151	0.51984	0.34455	1.19043
543643	4264253	543642.72_4264252.62	0.76234	0.42039	0.61706	0.40396	1.4393
543663	4264253	543662.72_4264252.62	1.02451	0.53592	0.79518	0.50994	1.8982
543683	4264253	543682.72_4264252.62	1.58133	0.73751	1.13131	0.70619	2.86384
543703	4264253	543702.72_4264252.62	2.54193	1.04707	1.70412	1.0218	4.70676
543723	4264253	543722.72_4264252.62	3.88307	1.43416	2.59875	1.42996	7.85418
543743	4264253	543742.72_4264252.62	6.8198	2.14832	4.77152	2.20779	18.70871
543803	4264253	543802.72_4264252.62	29.85512	5.33618	25.50034	6.05378	16.30988
543823	4264253	543822.72_4264252.62	41.95401	6.94948	38.23148	8.0302	12.11461
543843	4264253	543842.72_4264252.62	51.06453	8.71084	48.24134	10.20361	9.62074
543863	4264253	543862.72_4264252.62	53.13907	10.54341	51.32759	12.46571	7.95816
543883	4264253	543882.72_4264252.62	50.28626	11.93395	47.62223	14.23778	6.77914
543903	4264253	543902.72_4264252.62	44.03134	13.51399	44.65557	16.1602	5.88715
543923	4264253	543922.72_4264252.62	34.61206	14.9429	38.9581	17.78889	5.20354
543943	4264253	543942.72_4264252.62	26.29784	15.30283	29.67073	18.15128	4.6544
544023	4264253	544022.72_4264252.62	9.04715	12.16491	10.4451	12.96001	3.22065
544063	4264253	544062.72_4264252.62	6.01129	9.46683	7.22628	9.54573	2.75496
544083	4264253	544082.72_4264252.62	5.03815	7.96486	5.9148	7.94704	2.54179
544103	4264253	544102.72_4264252.62	4.30486	6.59042	4.86567	6.65648	2.34249
544123	4264253	544122.72_4264252.62	3.78024	5.6843	4.25169	5.84226	2.19214
544203	4264253	544202.72_4264252.62	2.45321	3.22778	2.74759	3.21963	1.70479
544223	4264253	544222.72_4264252.62	2.23965	2.85571	2.51478	2.7716	1.60777
544243	4264253	544242.72_4264252.62	2.05354	2.55399	2.30665	2.42878	1.51734
544263	4264253	544262.72_4264252.62	1.88931	2.30751	2.1145	2.17543	1.43211
544283	4264253	544282.72_4264252.62	1.74098	2.09199	1.92379	1.98094	1.34808
544303	4264253	544302.72_4264252.62	1.61269	1.93067	1.77107	1.85383	1.27441
544323	4264253	544322.72_4264252.62	1.49858	1.79637	1.6363	1.7573	1.20638
543363	4264273	543362.72_4264272.62	0.11623	0.09333	0.10513	0.10826	0.21881
543383	4264273	543382.72_4264272.62	0.1263	0.09973	0.11415	0.11412	0.23989
543403	4264273	543402.72_4264272.62	0.14163	0.10868	0.12755	0.12412	0.26901
543423	4264273	543422.72_4264272.62	0.16239	0.11987	0.14536	0.13747	0.30671
543443	4264273	543442.72_4264272.62	0.1705	0.12523	0.15324	0.14006	0.33182
543463	4264273	543462.72_4264272.62	0.18557	0.13364	0.16689	0.14653	0.3672
543483	4264273	543482.72_4264272.62	0.20634	0.14457	0.18561	0.1551	0.41202
543503	4264273	543502.72_4264272.62	0.23035	0.15702	0.20702	0.16356	0.46377
543523	4264273	543522.72_4264272.62	0.27037	0.17653	0.24172	0.18014	0.5416
543543	4264273	543542.72_4264272.62	0.34434	0.20845	0.30168	0.21164	0.66928
543563	4264273	543562.72_4264272.62	0.44498	0.24854	0.37543	0.2516	0.83697
543583	4264273	543582.72_4264272.62	0.508	0.28191	0.42171	0.2801	0.96871
543603	4264273	543602.72_4264272.62	0.57144	0.32145	0.46831	0.3122	1.1101
543623	4264273	543622.72_4264272.62	0.68108	0.38168	0.54512	0.3634	1.32512

543643	4264273	543642.72_4264272.62	0.85238	0.46929	0.66131	0.43995	1.64186
543663	4264273	543662.72_4264272.62	1.15716	0.60508	0.86035	0.56755	2.18225
543683	4264273	543682.72_4264272.62	1.72555	0.81789	1.22111	0.78292	3.21358
543703	4264273	543702.72_4264272.62	2.8155	1.15538	1.91509	1.14187	5.47416
543723	4264273	543722.72_4264272.62	4.77563	1.68773	3.29484	1.72067	11.67123
543843	4264273	543842.72_4264272.62	37.47074	7.68202	33.27301	9.08026	8.63686
543863	4264273	543862.72_4264272.62	38.85783	8.97951	34.88137	10.67556	7.22455
543883	4264273	543882.72_4264272.62	37.58563	10.31717	34.61704	12.2603	6.2068
543903	4264273	543902.72_4264272.62	33.71395	11.64066	33.11612	13.81876	5.43706
544043	4264273	544042.72_4264272.62	6.92124	9.37615	7.8503	9.83174	2.82021
544063	4264273	544062.72_4264272.62	5.6898	8.39857	6.61872	8.5391	2.61752
544083	4264273	544082.72_4264272.62	4.7455	7.19207	5.42601	7.15505	2.41081
544103	4264273	544102.72_4264272.62	4.07725	6.05917	4.53442	6.03987	2.23064
544123	4264273	544122.72_4264272.62	3.59484	5.29315	3.98499	5.33738	2.09176
544143	4264273	544142.72_4264272.62	3.19123	4.60054	3.50231	4.72916	1.95858
544163	4264273	544162.72_4264272.62	2.86325	4.02891	3.12985	4.19896	1.84055
544203	4264273	544202.72_4264272.62	2.36163	3.13253	2.59926	3.20645	1.63793
544223	4264273	544222.72_4264272.62	2.16338	2.77684	2.39587	2.77227	1.5478
544243	4264273	544242.72_4264272.62	1.98827	2.46757	2.20712	2.4011	1.46132
544263	4264273	544262.72_4264272.62	1.83317	2.20756	2.03292	2.10295	1.37911
544283	4264273	544282.72_4264272.62	1.69678	2.00001	1.87995	1.87951	1.30343
544303	4264273	544302.72_4264272.62	1.57717	1.84019	1.7501	1.72349	1.23575
544323	4264273	544322.72_4264272.62	1.46917	1.70575	1.62679	1.61034	1.17154
543363	4264293	543362.72_4264292.62	0.15218	0.10761	0.13436	0.12756	0.25501
543383	4264293	543382.72_4264292.62	0.16181	0.11307	0.1436	0.13229	0.2777
543403	4264293	543402.72_4264292.62	0.1873	0.12467	0.16446	0.14593	0.31836
543423	4264293	543422.72_4264292.62	0.21202	0.13557	0.1853	0.1574	0.36191
543443	4264293	543442.72_4264292.62	0.21679	0.13966	0.19284	0.15739	0.38983
543463	4264293	543462.72_4264292.62	0.23621	0.14925	0.21088	0.16349	0.43593
543483	4264293	543482.72_4264292.62	0.27112	0.16446	0.24004	0.17555	0.50336
543503	4264293	543502.72_4264292.62	0.30754	0.18108	0.26926	0.1879	0.57874
543523	4264293	543522.72_4264292.62	0.35438	0.20259	0.30417	0.20568	0.67401
543543	4264293	543542.72_4264292.62	0.43226	0.23557	0.35696	0.23686	0.81694
543563	4264293	543562.72_4264292.62	0.52216	0.27587	0.41385	0.27477	0.98843
543583	4264293	543582.72_4264292.62	0.57939	0.31312	0.45298	0.3056	1.12787
543603	4264293	543602.72_4264292.62	0.64407	0.35918	0.49901	0.34205	1.28291
543623	4264293	543622.72_4264292.62	0.7851	0.43528	0.59204	0.40858	1.55518
543643	4264293	543642.72_4264292.62	1.00016	0.54167	0.73534	0.50715	1.94782
543663	4264293	543662.72_4264292.62	1.37205	0.69948	0.98395	0.6651	2.61404
543683	4264293	543682.72_4264292.62	2.03636	0.93502	1.43617	0.91329	3.89766
543703	4264293	543702.72_4264292.62	3.27323	1.29991	2.29781	1.3094	6.94454
543723	4264293	543722.72_4264292.62	5.3259	1.83684	3.87909	1.90794	16.64159
543883	4264293	543882.72_4264292.62	29.10626	9.17388	27.00737	10.82016	5.7204
544023	4264293	544022.72_4264292.62	7.99767	8.61046	8.52852	9.50591	2.8815
544043	4264293	544042.72_4264292.62	6.53436	8.25261	7.23118	8.64577	2.67705
544123	4264293	544122.72_4264292.62	3.39059	4.862	3.67607	4.83678	1.99114
544143	4264293	544142.72_4264292.62	3.02428	4.2951	3.26324	4.3348	1.87191

544163	4264293	544162.72_4264292.62	2.72352	3.81518	2.93151	3.92435	1.76435
544183	4264293	544182.72_4264292.62	2.47012	3.38842	2.65219	3.52932	1.66427
544223	4264293	544222.72_4264292.62	2.07464	2.69676	2.24149	2.75803	1.4903
544243	4264293	544242.72_4264292.62	1.91225	2.39978	2.06856	2.39886	1.40877
544263	4264293	544262.72_4264292.62	1.77192	2.1566	1.92929	2.10453	1.33528
544283	4264293	544282.72_4264292.62	1.64744	1.95327	1.80684	1.86573	1.26671
544303	4264293	544302.72_4264292.62	1.53491	1.78062	1.69068	1.67328	1.20115
544323	4264293	544322.72_4264292.62	1.43558	1.64681	1.59286	1.53328	1.14248
544343	4264293	544342.72_4264292.62	1.34358	1.52823	1.49141	1.42471	1.08477
544423	4264293	544422.72_4264292.62	1.05671	1.22645	1.17863	1.22245	0.89773
544443	4264293	544442.72_4264292.62	0.98904	1.12397	1.06657	1.12946	0.83946
544463	4264293	544462.72_4264292.62	0.94148	1.09347	1.03177	1.10335	0.81212
543363	4264313	543362.72_4264312.62	0.19002	0.1188	0.16407	0.14063	0.29042
543383	4264313	543382.72_4264312.62	0.22427	0.13183	0.19037	0.15593	0.338
543403	4264313	543402.72_4264312.62	0.26511	0.14651	0.22135	0.17194	0.39703
543423	4264313	543422.72_4264312.62	0.29694	0.15827	0.24641	0.18186	0.45409
543443	4264313	543442.72_4264312.62	0.2833	0.15713	0.24192	0.17323	0.47131
543463	4264313	543462.72_4264312.62	0.29969	0.16613	0.25608	0.17687	0.52319
543483	4264313	543482.72_4264312.62	0.33617	0.18232	0.28168	0.18901	0.60294
543503	4264313	543502.72_4264312.62	0.4032	0.2091	0.32333	0.2137	0.72801
543523	4264313	543522.72_4264312.62	0.47945	0.24172	0.36761	0.24445	0.87956
543543	4264313	543542.72_4264312.62	0.55061	0.27724	0.40806	0.27703	1.03814
543563	4264313	543562.72_4264312.62	0.62267	0.31821	0.45048	0.31313	1.20719
543583	4264313	543582.72_4264312.62	0.68832	0.36331	0.49458	0.35047	1.36973
543603	4264313	543602.72_4264312.62	0.76512	0.41827	0.55282	0.39603	1.54709
543623	4264313	543622.72_4264312.62	0.93642	0.50792	0.66886	0.47941	1.87194
543643	4264313	543642.72_4264312.62	1.21093	0.63348	0.85737	0.6042	2.36957
543663	4264313	543662.72_4264312.62	1.68554	0.81713	1.19136	0.79578	3.26371
543683	4264313	543682.72_4264312.62	2.51758	1.0894	1.79251	1.0888	5.12745
543703	4264313	543702.72_4264312.62	3.88589	1.48276	2.8338	1.52446	9.84741
543723	4264313	543722.72_4264312.62	5.92031	2.01984	4.57705	2.14555	25.00032
544023	4264313	544022.72_4264312.62	7.57266	7.36844	7.65896	8.19101	2.73208
544043	4264313	544042.72_4264312.62	6.21033	7.27832	6.64628	7.6154	2.54731
544163	4264313	544162.72_4264312.62	2.58363	3.59165	2.74631	3.62856	1.69339
544243	4264313	544242.72_4264312.62	1.83025	2.3418	1.9422	2.39346	1.36105
544263	4264313	544262.72_4264312.62	1.70197	2.11476	1.81493	2.11478	1.2932
544283	4264313	544282.72_4264312.62	1.58798	1.91638	1.70426	1.87389	1.22937
544303	4264313	544302.72_4264312.62	1.48369	1.73851	1.59796	1.66657	1.1669
544323	4264313	544322.72_4264312.62	1.39171	1.59716	1.51171	1.50468	1.11089
544343	4264313	544342.72_4264312.62	1.308	1.47913	1.43194	1.37573	1.05816
544423	4264313	544422.72_4264312.62	1.03093	1.1415	1.12644	1.09797	0.86732
544443	4264313	544442.72_4264312.62	0.97288	1.07296	1.05174	1.05203	0.82205
543403	4264333	543402.72_4264332.62	0.31468	0.15873	0.25699	0.18015	0.46191
543423	4264333	543422.72_4264332.62	0.36078	0.17592	0.28911	0.19422	0.54596
543443	4264333	543442.72_4264332.62	0.35758	0.1777	0.28488	0.18935	0.57988
543463	4264333	543462.72_4264332.62	0.36906	0.18655	0.29057	0.19299	0.63723
543483	4264333	543482.72_4264332.62	0.42504	0.21124	0.32191	0.21534	0.75879

543503	4264333	543502.72_4264332.62	0.49758	0.24451	0.36202	0.24721	0.9186
543523	4264333	543522.72_4264332.62	0.56484	0.27997	0.39896	0.28053	1.0837
543543	4264333	543542.72_4264332.62	0.64891	0.32528	0.44725	0.3229	1.2844
543563	4264333	543562.72_4264332.62	0.7492	0.38027	0.50754	0.37358	1.51499
543583	4264333	543582.72_4264332.62	0.83718	0.43428	0.56572	0.42088	1.71201
543603	4264333	543602.72_4264332.62	0.9725	0.50848	0.65856	0.48946	1.98248
543623	4264333	543622.72_4264332.62	1.17909	0.60875	0.80543	0.58774	2.37009
543643	4264333	543642.72_4264332.62	1.54143	0.75739	1.06755	0.74119	3.06408
543663	4264333	543662.72_4264332.62	2.11104	0.96166	1.50023	0.95836	4.29469
543683	4264333	543682.72_4264332.62	3.04445	1.25673	2.22649	1.28242	6.99152
543703	4264333	543702.72_4264332.62	4.45199	1.66566	3.41103	1.75116	14.90504
543803	4264333	543802.72_4264332.62	15.20042	4.4522	13.53297	5.23227	9.031
543823	4264333	543822.72_4264332.62	16.8904	5.07765	15.20493	5.9928	7.43033
543983	4264333	543982.72_4264332.62	9.99938	7.08745	9.34111	8.1352	3.01543
544003	4264333	544002.72_4264332.62	8.41732	6.76313	8.03374	7.60614	2.79284
544023	4264333	544022.72_4264332.62	7.05889	6.4652	6.97807	7.16791	2.60038
544043	4264333	544042.72_4264332.62	5.89237	6.19455	6.11494	6.74441	2.43026
544263	4264333	544262.72_4264332.62	1.62536	2.06359	1.70876	2.10739	1.25065
544283	4264333	544282.72_4264332.62	1.51931	1.87209	1.59899	1.87313	1.18941
544303	4264333	544302.72_4264332.62	1.42605	1.70832	1.50785	1.67392	1.13355
544323	4264333	544322.72_4264332.62	1.34114	1.5632	1.42444	1.5033	1.08
544343	4264333	544342.72_4264332.62	1.26453	1.44137	1.35231	1.36297	1.03029
544423	4264333	544422.72_4264332.62	1.00227	1.07227	1.0619	0.99755	0.83889
544443	4264333	544442.72_4264332.62	0.9573	1.04329	1.03787	0.98558	0.81311
543443	4264353	543442.72_4264352.62	0.43259	0.20772	0.32382	0.2144	0.73131
543463	4264353	543462.72_4264352.62	0.45893	0.22335	0.33354	0.22731	0.82292
543483	4264353	543482.72_4264352.62	0.49991	0.24726	0.35379	0.24963	0.94602
543503	4264353	543502.72_4264352.62	0.5506	0.27754	0.38128	0.27841	1.09206
543523	4264353	543522.72_4264352.62	0.63129	0.32276	0.43003	0.32201	1.2987
543543	4264353	543542.72_4264352.62	0.74152	0.38281	0.49954	0.37983	1.56464
543563	4264353	543562.72_4264352.62	0.8812	0.45636	0.58881	0.45057	1.88299
543583	4264353	543582.72_4264352.62	0.99928	0.51732	0.66267	0.50719	2.11741
543603	4264353	543602.72_4264352.62	1.20681	0.61364	0.80318	0.60248	2.52651
543623	4264353	543622.72_4264352.62	1.51353	0.74243	1.0263	0.73436	3.14347
543643	4264353	543642.72_4264352.62	1.97113	0.91576	1.37976	0.91707	4.16745
543663	4264353	543662.72_4264352.62	2.62654	1.14059	1.91149	1.16184	5.99447
543683	4264353	543682.72_4264352.62	3.62057	1.45765	2.76326	1.52151	10.55657
543703	4264353	543702.72_4264352.62	4.96119	1.86264	4.02575	2.00591	22.63578
543783	4264353	543782.72_4264352.62	11.61058	3.70178	10.31037	4.33537	9.95854
543803	4264353	543802.72_4264352.62	12.85785	4.11605	11.44525	4.84371	7.82308
543823	4264353	543822.72_4264352.62	14.16647	4.68432	12.77358	5.51291	6.6604
544003	4264353	544002.72_4264352.62	7.7355	5.85617	7.12927	6.58987	2.65324
544023	4264353	544022.72_4264352.62	6.48482	5.83815	6.44506	6.40451	2.48642
544043	4264353	544042.72_4264352.62	5.39176	5.91394	5.75108	6.12981	2.32452
544263	4264353	544262.72_4264352.62	1.54932	2.00678	1.61552	2.07846	1.21008
544283	4264353	544282.72_4264352.62	1.45044	1.8319	1.51462	1.86954	1.15241
544303	4264353	544302.72_4264352.62	1.36284	1.67281	1.42422	1.67409	1.09819

544323	4264353	544322.72_4264352.62	1.28712	1.54018	1.35283	1.51088	1.05048
544423	4264353	544422.72_4264352.62	0.97325	1.0302	1.00758	0.94869	0.81867
544443	4264353	544442.72_4264352.62	0.93596	1.01131	1.00205	0.9304	0.79983
543463	4264373	543462.72_4264372.62	0.50513	0.25686	0.35673	0.25893	0.99197
543483	4264373	543482.72_4264372.62	0.54258	0.28104	0.37504	0.28279	1.11728
543503	4264373	543502.72_4264372.62	0.59319	0.31269	0.40425	0.31336	1.26771
543523	4264373	543522.72_4264372.62	0.6829	0.36371	0.46189	0.36277	1.49866
543543	4264373	543542.72_4264372.62	0.82242	0.43879	0.55498	0.43585	1.8476
543563	4264373	543562.72_4264372.62	1.00638	0.5332	0.68071	0.52841	2.29038
543583	4264373	543582.72_4264372.62	1.18087	0.61206	0.79593	0.60629	2.63768
543603	4264373	543602.72_4264372.62	1.46871	0.73678	1.00779	0.73373	3.27828
543623	4264373	543622.72_4264372.62	1.8876	0.90659	1.33859	0.91132	4.33533
543643	4264373	543642.72_4264372.62	2.43788	1.11084	1.79578	1.13113	5.99336
543663	4264373	543662.72_4264372.62	3.14732	1.35171	2.4196	1.40294	8.94917
543683	4264373	543682.72_4264372.62	4.11916	1.6702	3.34997	1.78028	16.48181
543803	4264373	543802.72_4264372.62	11.19433	3.88768	10.01488	4.56767	6.97972
544003	4264373	544002.72_4264372.62	7.02687	5.23178	6.46425	5.85967	2.53567
544023	4264373	544022.72_4264372.62	5.94608	5.31425	5.9551	5.76416	2.38181
544043	4264373	544042.72_4264372.62	4.97106	5.39781	5.36707	5.55773	2.22435
544063	4264373	544062.72_4264372.62	4.17951	5.07366	4.67649	5.17981	2.06332
544283	4264373	544282.72_4264372.62	1.38442	1.78684	1.43555	1.84877	1.11707
544303	4264373	544302.72_4264372.62	1.3026	1.64387	1.35623	1.67626	1.0667
544323	4264373	544322.72_4264372.62	1.22933	1.50984	1.28226	1.51078	1.01848
544403	4264373	544402.72_4264372.62	0.99701	1.10049	1.03916	1.03618	0.84993
544423	4264373	544422.72_4264372.62	0.9414	1.0018	0.96023	0.93289	0.80015
544443	4264373	544442.72_4264372.62	0.909	0.98089	0.95783	0.90123	0.78352
543503	4264393	543502.72_4264392.62	0.6393	0.35037	0.43595	0.35158	1.45533
543523	4264393	543522.72_4264392.62	0.73686	0.40379	0.49952	0.40243	1.70007
543543	4264393	543542.72_4264392.62	0.89893	0.48858	0.61186	0.48502	2.11123
543563	4264393	543562.72_4264392.62	1.12625	0.60329	0.78037	0.5989	2.69369
543583	4264393	543582.72_4264392.62	1.39825	0.72927	0.99052	0.72644	3.38153
543603	4264393	543602.72_4264392.62	1.72371	0.86424	1.25022	0.86707	4.21785
543623	4264393	543622.72_4264392.62	2.17435	1.04288	1.63082	1.05761	5.61017
543643	4264393	543642.72_4264392.62	2.77989	1.27292	2.17582	1.3108	8.10977
543663	4264393	543662.72_4264392.62	3.54259	1.54845	2.92133	1.63041	13.26116
543683	4264393	543682.72_4264392.62	4.45943	1.86518	3.88411	2.02075	26.36182
543783	4264393	543782.72_4264392.62	9.15772	3.36233	8.1917	3.94412	7.56149
543803	4264393	543802.72_4264392.62	9.86704	3.68358	8.86727	4.31074	6.3022
543823	4264393	543822.72_4264392.62	10.24978	3.9421	9.2485	4.59303	5.35544
543983	4264393	543982.72_4264392.62	7.04828	4.64327	6.18775	5.3409	2.56651
544003	4264393	544002.72_4264392.62	6.39136	4.72888	5.89649	5.26804	2.4299
544023	4264393	544022.72_4264392.62	5.4691	4.83707	5.48414	5.19903	2.2844
544043	4264393	544042.72_4264392.62	4.58015	4.94286	4.97942	5.05521	2.12792
544063	4264393	544062.72_4264392.62	3.92276	4.62347	4.35438	4.71922	1.9766
544303	4264393	544302.72_4264392.62	1.24714	1.6118	1.29024	1.66569	1.03703
544323	4264393	544322.72_4264392.62	1.17647	1.48639	1.22155	1.51446	0.99054
544343	4264393	544342.72_4264392.62	1.11215	1.36495	1.15449	1.36601	0.94483

544363	4264393	544362.72_4264392.62	1.0567	1.26172	1.09942	1.24056	0.90461
544383	4264393	544382.72_4264392.62	1.00731	1.17194	1.0511	1.135	0.86784
544403	4264393	544402.72_4264392.62	0.95499	1.07109	0.98363	1.02609	0.82401
544423	4264393	544422.72_4264392.62	0.90928	0.99041	0.92912	0.93824	0.78552
543603	4264413	543602.72_4264412.62	1.91784	0.96126	1.45672	0.97084	5.19543
543623	4264413	543622.72_4264412.62	2.40712	1.1608	1.89992	1.1876	7.21834
543643	4264413	543642.72_4264412.62	3.01316	1.39704	2.49149	1.45668	11.00652
543663	4264413	543662.72_4264412.62	3.76545	1.69053	3.30155	1.80496	21.06448
543703	4264413	543702.72_4264412.62	5.45975	2.28159	5.10203	2.57516	23.64122
543723	4264413	543722.72_4264412.62	6.32051	2.55696	5.89262	2.94337	15.5137
543743	4264413	543742.72_4264412.62	7.07556	2.78816	6.48479	3.24938	11.08447
543763	4264413	543762.72_4264412.62	7.68449	2.98901	6.9345	3.5002	8.38161
543783	4264413	543782.72_4264412.62	8.3228	3.25811	7.50231	3.80841	6.82967
543803	4264413	543802.72_4264412.62	8.76225	3.48768	7.90551	4.06005	5.72479
543823	4264413	543822.72_4264412.62	8.77694	3.58433	7.91896	4.15613	4.7674
543943	4264413	543942.72_4264412.62	7.65319	4.43576	6.61671	5.24165	2.82801
543963	4264413	543962.72_4264412.62	6.96738	4.28286	6.00032	5.01614	2.61657
543983	4264413	543982.72_4264412.62	6.32948	4.14587	5.5242	4.76306	2.44434
544003	4264413	544002.72_4264412.62	5.82513	4.33015	5.42775	4.79051	2.33396
544043	4264413	544042.72_4264412.62	4.19273	4.55574	4.59174	4.59221	2.02887
544283	4264413	544282.72_4264412.62	1.2782	1.69236	1.31099	1.74913	1.05517
544303	4264413	544302.72_4264412.62	1.19939	1.57617	1.23203	1.63644	1.00927
544323	4264413	544322.72_4264412.62	1.12916	1.4601	1.16261	1.50724	0.96416
544343	4264413	544342.72_4264412.62	1.06778	1.35117	1.1037	1.37562	0.92187
544363	4264413	544362.72_4264412.62	1.0142	1.25199	1.05335	1.25225	0.88296
544383	4264413	544382.72_4264412.62	0.96502	1.15737	1.00361	1.13822	0.84495
544403	4264413	544402.72_4264412.62	0.91399	1.05134	0.93695	1.0211	0.80018
544423	4264413	544422.72_4264412.62	0.87796	0.99098	0.90767	0.95136	0.77316
543643	4264433	543642.72_4264432.62	3.28386	1.51724	2.79498	1.60066	16.71444
543703	4264433	543702.72_4264432.62	5.39483	2.35595	5.15889	2.67318	17.82739
543723	4264433	543722.72_4264432.62	6.05344	2.57598	5.72899	2.97353	12.66396
543743	4264433	543742.72_4264432.62	6.65992	2.77527	6.18213	3.23157	9.54792
543763	4264433	543762.72_4264432.62	7.25281	3.01534	6.68555	3.51069	7.66323
543783	4264433	543782.72_4264432.62	7.69223	3.21239	7.03503	3.72891	6.31984
543803	4264433	543802.72_4264432.62	7.82685	3.29815	7.0893	3.81886	5.22529
543823	4264433	543822.72_4264432.62	7.64984	3.29548	6.91297	3.80609	4.30734
543883	4264433	543882.72_4264432.62	7.81346	3.96434	7.18643	4.59712	3.41084
543943	4264433	543942.72_4264432.62	6.82313	4.04635	5.94922	4.76633	2.69866
543963	4264433	543962.72_4264432.62	6.27592	3.931	5.46853	4.58112	2.51041
543983	4264433	543982.72_4264432.62	5.77318	3.86105	5.14639	4.40389	2.36014
544263	4264433	544262.72_4264432.62	1.33062	1.74688	1.37776	1.75148	1.07215
544283	4264433	544282.72_4264432.62	1.23965	1.63939	1.27518	1.67319	1.02643
544303	4264433	544302.72_4264432.62	1.15923	1.53247	1.18655	1.58412	0.98163
544323	4264433	544322.72_4264432.62	1.08924	1.42946	1.11339	1.48303	0.93908
544343	4264433	544342.72_4264432.62	1.02855	1.33171	1.05403	1.37314	0.8992
544363	4264433	544362.72_4264432.62	0.97631	1.24132	1.00665	1.26236	0.86259
544383	4264433	544382.72_4264432.62	0.92183	1.13221	0.94423	1.13327	0.81847

544403	4264433	544402.72_4264432.62	0.87613	1.03984	0.89395	1.02427	0.77964
544423	4264433	544422.72_4264432.62	0.8504	1.00199	0.89083	0.97135	0.76359
543723	4264453	543722.72_4264452.62	5.8189	2.62312	5.61331	3.01358	10.68235
543743	4264453	543742.72_4264452.62	6.40427	2.84459	6.08222	3.27819	8.50371
543763	4264453	543762.72_4264452.62	6.96808	3.11973	6.6207	3.57358	7.06643
543783	4264453	543782.72_4264452.62	7.35843	3.2565	6.81663	3.72953	5.94952
543803	4264453	543802.72_4264452.62	7.21729	3.232	6.63954	3.71623	4.9573
543863	4264453	543862.72_4264452.62	7.12089	3.55247	6.59008	4.07883	3.50326
543883	4264453	543882.72_4264452.62	6.99404	3.7096	6.50029	4.28329	3.2517
543923	4264453	543922.72_4264452.62	6.55465	3.75693	5.77407	4.41429	2.77078
544263	4264453	544262.72_4264452.62	1.30082	1.68165	1.36463	1.66045	1.04234
544283	4264453	544282.72_4264452.62	1.20851	1.58066	1.25389	1.5878	0.9975
544303	4264453	544302.72_4264452.62	1.1279	1.48591	1.15964	1.51855	0.95525
544323	4264453	544322.72_4264452.62	1.05671	1.39287	1.07886	1.44001	0.91443
544343	4264453	544342.72_4264452.62	0.9958	1.30635	1.01455	1.35404	0.87691
544363	4264453	544362.72_4264452.62	0.93775	1.20949	0.95155	1.24657	0.83639
544383	4264453	544382.72_4264452.62	0.88296	1.10463	0.88801	1.12448	0.79249
544403	4264453	544402.72_4264452.62	0.8516	1.05855	0.87523	1.05817	0.77287
544423	4264453	544422.72_4264452.62	0.81649	0.99188	0.84657	0.97497	0.74464
543463	4264473	543462.72_4264472.62	0.82918	0.50135	0.60454	0.4804	2.55381
543483	4264473	543482.72_4264472.62	0.95656	0.57665	0.71125	0.55054	3.14346
543743	4264473	543742.72_4264472.62	6.03687	2.96353	6.04261	3.33161	7.53193
543763	4264473	543762.72_4264472.62	6.44136	3.11957	6.31488	3.51078	6.38181
543783	4264473	543782.72_4264472.62	6.71935	3.18489	6.37323	3.60401	5.47613
543803	4264473	543802.72_4264472.62	6.66179	3.1724	6.25412	3.61526	4.69245
543823	4264473	543822.72_4264472.62	6.56417	3.15724	6.09517	3.60878	4.0484
543843	4264473	543842.72_4264472.62	6.48037	3.2169	6.01974	3.67385	3.61456
543863	4264473	543862.72_4264472.62	6.43044	3.35445	6.01753	3.83253	3.3377
543883	4264473	543882.72_4264472.62	6.53515	3.47975	5.91192	3.99941	3.09975
544243	4264473	544242.72_4264472.62	1.37747	1.71732	1.48193	1.66857	1.05822
544263	4264473	544262.72_4264472.62	1.27501	1.61457	1.35658	1.57649	1.0124
544283	4264473	544282.72_4264472.62	1.18371	1.52139	1.24425	1.50471	0.96942
544303	4264473	544302.72_4264472.62	1.10447	1.43883	1.14855	1.44798	0.93029
544323	4264473	544322.72_4264472.62	1.03249	1.3551	1.062	1.38641	0.89141
544343	4264473	544342.72_4264472.62	0.96799	1.27132	0.98624	1.31447	0.85337
544363	4264473	544362.72_4264472.62	0.90054	1.15866	0.89919	1.20162	0.80478
544383	4264473	544382.72_4264472.62	0.86007	1.10682	0.86647	1.14004	0.7809
543443	4264493	543442.72_4264492.62	0.76892	0.48136	0.57257	0.45761	2.52563
543463	4264493	543462.72_4264492.62	0.88244	0.55346	0.6711	0.52331	3.23153
543483	4264493	543482.72_4264492.62	1.01657	0.62884	0.78595	0.59646	3.99018
543503	4264493	543502.72_4264492.62	1.17452	0.70724	0.91979	0.67754	4.89707
543783	4264493	543782.72_4264492.62	6.13261	3.07657	5.9017	3.44595	5.03752
543803	4264493	543802.72_4264492.62	6.22664	3.06248	5.80687	3.46085	4.38828
543823	4264493	543822.72_4264492.62	5.99992	3.02898	5.64217	3.43985	3.83313
543843	4264493	543842.72_4264492.62	5.89768	3.05874	5.53756	3.47347	3.43438
543863	4264493	543862.72_4264492.62	5.81431	3.15417	5.4888	3.58704	3.16651
543883	4264493	543882.72_4264492.62	5.86801	3.23756	5.34817	3.70967	2.93817

544223	4264493	544222.72_4264492.62	1.45565	1.75221	1.58727	1.70267	1.07331
544243	4264493	544242.72_4264492.62	1.34894	1.64556	1.46515	1.59689	1.02697
544263	4264493	544262.72_4264492.62	1.25263	1.55272	1.35091	1.50657	0.98432
544283	4264493	544282.72_4264492.62	1.16386	1.46571	1.24149	1.43169	0.94308
544303	4264493	544302.72_4264492.62	1.0854	1.38906	1.14466	1.37602	0.90542
544323	4264493	544322.72_4264492.62	1.01408	1.31448	1.0563	1.32538	0.86886
544343	4264493	544342.72_4264492.62	0.9407	1.21901	0.9609	1.24998	0.82504
543443	4264513	543442.72_4264512.62	0.81375	0.52028	0.62341	0.49053	3.14255
543463	4264513	543462.72_4264512.62	0.93244	0.59154	0.72766	0.55852	3.97712
543483	4264513	543482.72_4264512.62	1.07543	0.67999	0.86245	0.64285	5.14114
543503	4264513	543502.72_4264512.62	1.23611	0.75438	0.99984	0.72424	6.42633
543523	4264513	543522.72_4264512.62	1.4297	0.85403	1.18164	0.8288	8.39805
543823	4264513	543822.72_4264512.62	5.43966	2.85011	5.13973	3.22209	3.58098
543843	4264513	543842.72_4264512.62	5.33488	2.86357	5.03241	3.23849	3.22483
543863	4264513	543862.72_4264512.62	5.26535	2.95344	5.00018	3.34604	2.99342
543883	4264513	543882.72_4264512.62	5.29725	3.01413	4.85398	3.44526	2.78224
543903	4264513	543902.72_4264512.62	5.07922	3.02651	4.60226	3.50009	2.58508
543923	4264513	543922.72_4264512.62	4.8235	2.98555	4.31826	3.48147	2.40163
544223	4264513	544222.72_4264512.62	1.41834	1.67885	1.54797	1.62986	1.04116
544243	4264513	544242.72_4264512.62	1.32049	1.58079	1.44234	1.5343	0.99772
544263	4264513	544262.72_4264512.62	1.23042	1.49393	1.33981	1.44652	0.95717
544283	4264513	544282.72_4264512.62	1.14609	1.41307	1.23839	1.36957	0.91801
544303	4264513	544302.72_4264512.62	1.06875	1.33904	1.14259	1.30897	0.88098
544323	4264513	544322.72_4264512.62	0.99785	1.26911	1.05356	1.26006	0.84552
544343	4264513	544342.72_4264512.62	0.9218	1.17459	0.95134	1.18895	0.80084
543463	4264533	543462.72_4264532.62	0.98196	0.62988	0.78732	0.59543	5.13065
543483	4264533	543482.72_4264532.62	1.12631	0.71736	0.92689	0.68129	6.88391
543503	4264533	543502.72_4264532.62	1.29381	0.80812	1.08611	0.7753	9.35515
543523	4264533	543522.72_4264532.62	1.48817	0.90777	1.27465	0.88248	13.25627
543803	4264533	543802.72_4264532.62	5.14855	2.72868	4.83992	3.056	3.77448
543823	4264533	543822.72_4264532.62	4.94202	2.67263	4.68233	3.00964	3.33872
543843	4264533	543842.72_4264532.62	4.87222	2.70611	4.62927	3.04479	3.04626
543863	4264533	543862.72_4264532.62	4.79374	2.7727	4.57788	3.12979	2.83137
543883	4264533	543882.72_4264532.62	4.80005	2.79682	4.40262	3.19367	2.62617
543903	4264533	543902.72_4264532.62	4.62562	2.83772	4.22274	3.27181	2.46366
543923	4264533	543922.72_4264532.62	4.44027	2.88336	4.08023	3.3252	2.32742
543943	4264533	543942.72_4264532.62	4.20244	2.79738	3.82937	3.21855	2.17036
544083	4264533	544082.72_4264532.62	2.29714	2.47853	2.42803	2.50625	1.39943
544103	4264533	544102.72_4264532.62	2.12605	2.35538	2.24082	2.40626	1.33321
544123	4264533	544122.72_4264532.62	1.96797	2.22217	2.07741	2.26386	1.26951
544203	4264533	544202.72_4264532.62	1.4788	1.71999	1.60237	1.66266	1.05672
544223	4264533	544222.72_4264532.62	1.3796	1.61191	1.50257	1.56172	1.01074
544243	4264533	544242.72_4264532.62	1.28872	1.51743	1.40841	1.47299	0.96853
544263	4264533	544262.72_4264532.62	1.20626	1.43739	1.32	1.39244	0.93054
544283	4264533	544282.72_4264532.62	1.12734	1.36152	1.22883	1.31566	0.89327
544303	4264533	544302.72_4264532.62	1.05105	1.28709	1.13529	1.24744	0.85593
544323	4264533	544322.72_4264532.62	0.98598	1.22881	1.05559	1.20274	0.82465

544343	4264533	544342.72_4264532.62	0.90945	1.13872	0.95254	1.13552	0.78084
543463	4264553	543462.72_4264552.62	1.02764	0.66533	0.84553	0.63126	7.04433
543483	4264553	543482.72_4264552.62	1.17269	0.75114	0.9879	0.7178	10.03522
543783	4264553	543782.72_4264552.62	4.69961	2.63462	4.55647	2.90395	3.95193
543803	4264553	543802.72_4264552.62	4.57432	2.52155	4.35529	2.82482	3.46531
543823	4264553	543822.72_4264552.62	4.52923	2.52893	4.31518	2.83298	3.13315
543843	4264553	543842.72_4264552.62	4.46084	2.55372	4.26322	2.85987	2.87443
543863	4264553	543862.72_4264552.62	4.34841	2.56941	4.15077	2.89811	2.65279
543883	4264553	543882.72_4264552.62	4.19891	2.57098	3.96786	2.94041	2.45944
543903	4264553	543902.72_4264552.62	4.22887	2.66035	3.88093	3.05988	2.34578
543923	4264553	543922.72_4264552.62	4.0941	2.77497	3.8373	3.16203	2.24062
543943	4264553	543942.72_4264552.62	3.89009	2.69837	3.62066	3.06313	2.09663
543963	4264553	543962.72_4264552.62	3.71076	2.68983	3.50046	2.98474	1.98013
543983	4264553	543982.72_4264552.62	3.43178	2.75701	3.42739	2.94002	1.86582
544083	4264553	544082.72_4264552.62	2.17847	2.32857	2.30504	2.34265	1.34934
544103	4264553	544102.72_4264552.62	2.02626	2.22599	2.13321	2.26794	1.28866
544203	4264553	544202.72_4264552.62	1.42995	1.65027	1.5398	1.59372	1.02525
544223	4264553	544222.72_4264552.62	1.33911	1.54919	1.45167	1.49699	0.98139
544243	4264553	544242.72_4264552.62	1.25493	1.4584	1.36786	1.41415	0.94048
544263	4264553	544262.72_4264552.62	1.18008	1.38418	1.29257	1.34214	0.90481
544283	4264553	544282.72_4264552.62	1.10721	1.31296	1.21265	1.26898	0.86944
544303	4264553	544302.72_4264552.62	1.03816	1.24748	1.13219	1.20321	0.83563
544323	4264553	544322.72_4264552.62	0.97294	1.18668	1.05271	1.14961	0.80328
544343	4264553	544342.72_4264552.62	0.896	1.09697	0.94858	1.07891	0.75897
543763	4264573	543762.72_4264572.62	4.25848	2.53488	4.25858	2.73744	4.04956
543783	4264573	543782.72_4264572.62	4.30427	2.43758	4.11465	2.69501	3.62408
543803	4264573	543802.72_4264572.62	4.31398	2.4113	4.05493	2.68338	3.25155
543823	4264573	543822.72_4264572.62	4.1789	2.40952	4.0116	2.68181	2.95593
543843	4264573	543842.72_4264572.62	4.09548	2.40825	3.93242	2.68581	2.70998
543863	4264573	543862.72_4264572.62	3.97776	2.40301	3.80391	2.70643	2.49867
543883	4264573	543882.72_4264572.62	3.86817	2.4291	3.67448	2.77092	2.34259
543903	4264573	543902.72_4264572.62	3.90731	2.56679	3.66024	2.92434	2.26021
543923	4264573	543922.72_4264572.62	3.76502	2.60545	3.53966	2.95611	2.13747
543943	4264573	543942.72_4264572.62	3.6066	2.60449	3.41709	2.91203	2.01479
543963	4264573	543962.72_4264572.62	3.38691	2.6335	3.33069	2.85546	1.89916
543983	4264573	543982.72_4264572.62	3.12874	2.71392	3.21461	2.76589	1.77452
544003	4264573	544002.72_4264572.62	2.85663	2.65578	3.06527	2.65756	1.64933
544103	4264573	544102.72_4264572.62	1.92771	2.09786	2.0273	2.13049	1.243
544203	4264573	544202.72_4264572.62	1.38131	1.58516	1.47718	1.53156	0.9951
544223	4264573	544222.72_4264572.62	1.29769	1.49055	1.39786	1.43679	0.95321
544243	4264573	544242.72_4264572.62	1.22017	1.40445	1.32358	1.35853	0.91393
544263	4264573	544262.72_4264572.62	1.15065	1.33217	1.25672	1.29192	0.87914
544283	4264573	544282.72_4264572.62	1.08275	1.26316	1.18591	1.22327	0.84478
544303	4264573	544302.72_4264572.62	1.0222	1.20686	1.12034	1.16327	0.81483
544323	4264573	544322.72_4264572.62	0.95811	1.14472	1.04405	1.10301	0.78195
544343	4264573	544342.72_4264572.62	0.88391	1.05954	0.9449	1.03068	0.73905
543763	4264593	543762.72_4264592.62	3.93464	2.42697	3.95784	2.60281	3.73411

543783	4264593	543782.72_4264592.62	4.00277	2.38945	3.90687	2.60453	3.41083
543803	4264593	543802.72_4264592.62	4.00678	2.36111	3.8579	2.59286	3.09278
543823	4264593	543822.72_4264592.62	3.9758	2.34328	3.80193	2.57902	2.82419
543843	4264593	543842.72_4264592.62	3.90608	2.32142	3.70457	2.56833	2.59033
543863	4264593	543862.72_4264592.62	3.84031	2.39173	3.68386	2.65573	2.4436
543883	4264593	543882.72_4264592.62	3.74769	2.46382	3.61141	2.75294	2.30887
543903	4264593	543902.72_4264592.62	3.62391	2.49044	3.46486	2.80176	2.17325
543923	4264593	543922.72_4264592.62	3.48699	2.49512	3.31869	2.79995	2.04558
543943	4264593	543942.72_4264592.62	3.28994	2.5514	3.24649	2.78554	1.92605
543963	4264593	543962.72_4264592.62	3.07926	2.54654	3.13052	2.70304	1.80224
543983	4264593	543982.72_4264592.62	2.82712	2.57253	3.00725	2.60914	1.67024
544203	4264593	544202.72_4264592.62	1.33175	1.52086	1.41365	1.47285	0.96499
544223	4264593	544222.72_4264592.62	1.25485	1.4333	1.34134	1.37973	0.92526
544243	4264593	544242.72_4264592.62	1.18543	1.3556	1.27793	1.30707	0.88907
544263	4264593	544262.72_4264592.62	1.12029	1.28456	1.21728	1.24389	0.85486
544283	4264593	544282.72_4264592.62	1.05888	1.22045	1.15744	1.18318	0.82266
544303	4264593	544302.72_4264592.62	1.00168	1.16427	1.09843	1.12453	0.79299
544323	4264593	544322.72_4264592.62	0.92824	1.08059	1.00729	1.0428	0.75099
544343	4264593	544342.72_4264592.62	0.87875	1.03939	0.95212	1.00289	0.72653
543763	4264613	543762.72_4264612.62	3.63318	2.33795	3.70049	2.48229	3.44281
543783	4264613	543782.72_4264612.62	3.71424	2.34412	3.7091	2.51166	3.17932
543803	4264613	543802.72_4264612.62	3.72619	2.30505	3.65971	2.49531	2.92807
543823	4264613	543822.72_4264612.62	3.70146	2.30551	3.63443	2.49789	2.70334
543843	4264613	543842.72_4264612.62	3.65342	2.33341	3.60441	2.53081	2.51905
543863	4264613	543862.72_4264612.62	3.5893	2.42203	3.58905	2.6247	2.36179
543883	4264613	543882.72_4264612.62	3.43664	2.51804	3.5197	2.71955	2.20422
543903	4264613	543902.72_4264612.62	3.32062	2.48671	3.33418	2.71968	2.07268
543923	4264613	543922.72_4264612.62	3.16061	2.487	3.18286	2.70228	1.94246
543943	4264613	543942.72_4264612.62	2.9534	2.53923	3.07051	2.65339	1.8044
543963	4264613	543962.72_4264612.62	2.77175	2.48789	2.93263	2.55712	1.68781
544203	4264613	544202.72_4264612.62	1.28301	1.4592	1.35268	1.41859	0.93561
544223	4264613	544222.72_4264612.62	1.2131	1.38034	1.28736	1.32876	0.89874
544243	4264613	544242.72_4264612.62	1.15006	1.3091	1.23074	1.25845	0.86493
544263	4264613	544262.72_4264612.62	1.08998	1.24156	1.17645	1.19867	0.83218
544283	4264613	544282.72_4264612.62	1.03448	1.18178	1.12567	1.14501	0.80195
544303	4264613	544302.72_4264612.62	0.96848	1.10667	1.0543	1.07357	0.76432
544323	4264613	544322.72_4264612.62	0.90869	1.04097	0.98588	1.0066	0.72996
543763	4264633	543762.72_4264632.62	3.31152	2.29813	3.48795	2.38193	3.11648
543783	4264633	543782.72_4264632.62	3.39585	2.30099	3.5121	2.41393	2.93245
543803	4264633	543802.72_4264632.62	3.42336	2.31984	3.53279	2.43832	2.73472
543823	4264633	543822.72_4264632.62	3.38221	2.37359	3.55144	2.47883	2.53257
543843	4264633	543842.72_4264632.62	3.32038	2.40598	3.51582	2.51428	2.35834
543863	4264633	543862.72_4264632.62	3.1982	2.49057	3.4479	2.56568	2.18194
543883	4264633	543882.72_4264632.62	3.01321	2.5143	3.31698	2.60958	1.99997
543903	4264633	543902.72_4264632.62	2.9463	2.48311	3.15741	2.61058	1.90839
543923	4264633	543922.72_4264632.62	2.81749	2.45066	2.99571	2.57341	1.79688
543943	4264633	543942.72_4264632.62	2.66792	2.40606	2.84516	2.49411	1.68612

544203	4264633	544202.72_4264632.62	1.23798	1.40393	1.29857	1.37133	0.90853
544223	4264633	544222.72_4264632.62	1.17263	1.33061	1.23654	1.28293	0.87336
544243	4264633	544242.72_4264632.62	1.11085	1.25877	1.17853	1.20834	0.83901
544263	4264633	544262.72_4264632.62	1.05783	1.19891	1.13242	1.15362	0.80941
544283	4264633	544282.72_4264632.62	1.0031	1.13669	1.08236	1.09997	0.77819
544303	4264633	544302.72_4264632.62	0.93637	1.05412	1.00835	1.02514	0.73738
544323	4264633	544322.72_4264632.62	0.89837	1.02307	0.97895	0.99058	0.71823
543823	4264653	543822.72_4264652.62	3.01831	2.33684	3.34073	2.37135	2.29217
543843	4264653	543842.72_4264652.62	2.96207	2.36041	3.2956	2.39952	2.1462
543863	4264653	543862.72_4264652.62	2.85624	2.37032	3.19402	2.42748	1.9971
543883	4264653	543882.72_4264652.62	2.74831	2.35354	3.05201	2.44456	1.87108
543903	4264653	543902.72_4264652.62	2.65006	2.32917	2.90087	2.44114	1.76661
544203	4264653	544202.72_4264652.62	1.19396	1.34982	1.24677	1.32593	0.8818
544223	4264653	544222.72_4264652.62	1.13263	1.282	1.18774	1.24004	0.8483
544243	4264653	544242.72_4264652.62	1.07724	1.21853	1.13591	1.16884	0.81714
544263	4264653	544262.72_4264652.62	1.02865	1.16274	1.09302	1.11474	0.78927
544283	4264653	544282.72_4264652.62	0.97062	1.09291	1.03706	1.05504	0.75467
544303	4264653	544302.72_4264652.62	0.91368	1.02323	0.97865	0.9943	0.71948
544203	4264673	544202.72_4264672.62	1.15149	1.29751	1.19787	1.28229	0.8557
544223	4264673	544222.72_4264672.62	1.09335	1.2344	1.14111	1.19942	0.82357
544243	4264673	544242.72_4264672.62	1.04352	1.17849	1.0944	1.13157	0.79532
544263	4264673	544262.72_4264672.62	0.99722	1.12462	1.05191	1.07578	0.76817
544283	4264673	544282.72_4264672.62	0.943	1.05876	0.99955	1.01818	0.73521
544303	4264673	544302.72_4264672.62	0.89298	0.99826	0.95148	0.96718	0.7041
543821	4264213	543821.23_4264212.93	58.76906	6.13172	48.71061	6.95396	17.49903
543823	4264233	543822.88_4264232.96	51.41552	6.69825	43.77729	7.70118	14.24908

Appendix D

Biological Resources Technical Report

INN AT THE ABBEY

Biological Resources Technical Report

Prepared for
Napa County
Planning, Building, and Environmental Services Department

August 2023; updated February 2025

ESA

INN AT THE ABBEY

Biological Resources Technical Report

Prepared for
Napa County
Planning, Building, and Environmental
Services Department

August 2023; updated February 2025

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com

ESA

Bend	Oakland	San Diego
Camarillo	Orlando	San Francisco
Delray Beach	Pasadena	Santa Monica
Destin	Petaluma	Sarasota
Irvine	Portland	Seattle
Los Angeles	Sacramento	Tampa

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper. ESA saved the following resources:

TABLE OF CONTENTS

Inn at the Abbey

Page

Executive Summary **1**

Chapter 1 ..... **1-1**
Introduction 1-1
1.1 Background and Purpose 1-1
1.2 Project Description 1-1
1.3 Property Location 1-1
1.4 Regulatory Context 1-4

Chapter 2 ..... **2-1**
Methods 2-1
2.1 Review of Background Information 2-1
2.2 Reconnaissance Survey 2-1

Chapter 3 ..... **3-1**
Environmental Setting 3-1
3.1 Vegetation Communities and Habitat Types 3-1
3.2 Special-Status Species 3-4
3.3 Wildlife Movement Corridors 3-10
3.4 Critical Habitat for Listed Fish and Wildlife Species 3-10
3.5 Sensitive Natural Communities 3-11
3.6 Protected Trees 3-11

Chapter 4 ..... **4-12**
Impacts and Recommended Measures 4-12
4.1 Special-Status Species 4-12
4.2 Protected Trees 4-16

Chapter 5 ..... **5-1**
References and Report Preparation 5-1
5.1 References 5-1
5.2 Document Preparation 5-3

Appendix A **1**

Appendix B **1**

Appendix C **1**

Appendix D **1**

Page

Appendices

A. Regulatory Context A-1
B. Agency Lists B-1
C. Plants Observed within the Study Area C-1
D. Wildlife Observed within the Study Area D-1
E. Regionally Occurring Special-Status Species E-1

Figures

Figure 1 Regional Location 1-2
Figure 2 Study Area 1-3

Tables

Table 1 Special-Status Species with Potential to Occur in the Study area 3-6

EXECUTIVE SUMMARY

Environmental Science Associates (ESA) conducted a biological survey within the approximately 15-acre Inn at the Abbey Project (Project) site. The applicant is proposing the development of a boutique hotel within the existing Freemark Abbey Winery complex located within Napa County, California. The purpose of this report is to describe site conditions and assess the suitability of the Project site and surrounding study area to support special-status species and sensitive habitat types. The study area is defined as the Project site and a 500-foot buffer. This report may be used in support of regulatory permitting and the California Environmental Quality Act (CEQA) compliance.

The following habitat types occur within the study area: oak woodland, developed, agricultural, and an engineered drainage ditch. The drainage ditch is not considered jurisdictional.

The study area provides suitable habitat for special-status plants including Napa false indigo (*Amorpha californica* var. *napensis*), Colusa layia (*Layia septentrionalis*), narrow-anthered brodiaea (*Brodiaea leptandra*) and Napa bluecurls (*Trichostema ruygtii*).

The study area provides suitable habitat for the following special-status wildlife species: white-tailed kite (*Elanus leucurus*), purple martin (*Progne subis*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

This page intentionally left blank

CHAPTER 1
Introduction

1.1 Background and Purpose

This Biological Resources Report was prepared for a 15-acre portion on the existing Freemark Abbey Winery property located in unincorporated Napa County, California (**Figures 1** and **2**). The purpose of this report is to describe site conditions and assess the suitability of the Inn at the Abbey Project (Project) site and surrounding study area to support special-status species and sensitive habitat types, including wetlands.

1.2 Project Description

A Major Use Permit Modification is proposed to accommodate development of a boutique hotel within the existing Freemark Abbey Winery complex. The Inn at the Abbey Project (Project) would construct a 79-room hotel that would be split between the North Parcel (50 rooms) and the South Parcel (29 rooms). The Project would demolish three existing structures totaling approximately 10,050 square feet. These buildings are currently used as a restaurant, retail wine shop, art gallery, and five-room motel. Demolition activities would also include removal of asphalt concrete driveways and surface parking areas, as well as concrete slabs. Overall, the Project would involve 10,050 square feet of demolition and approximately 78,500 square feet of new construction.

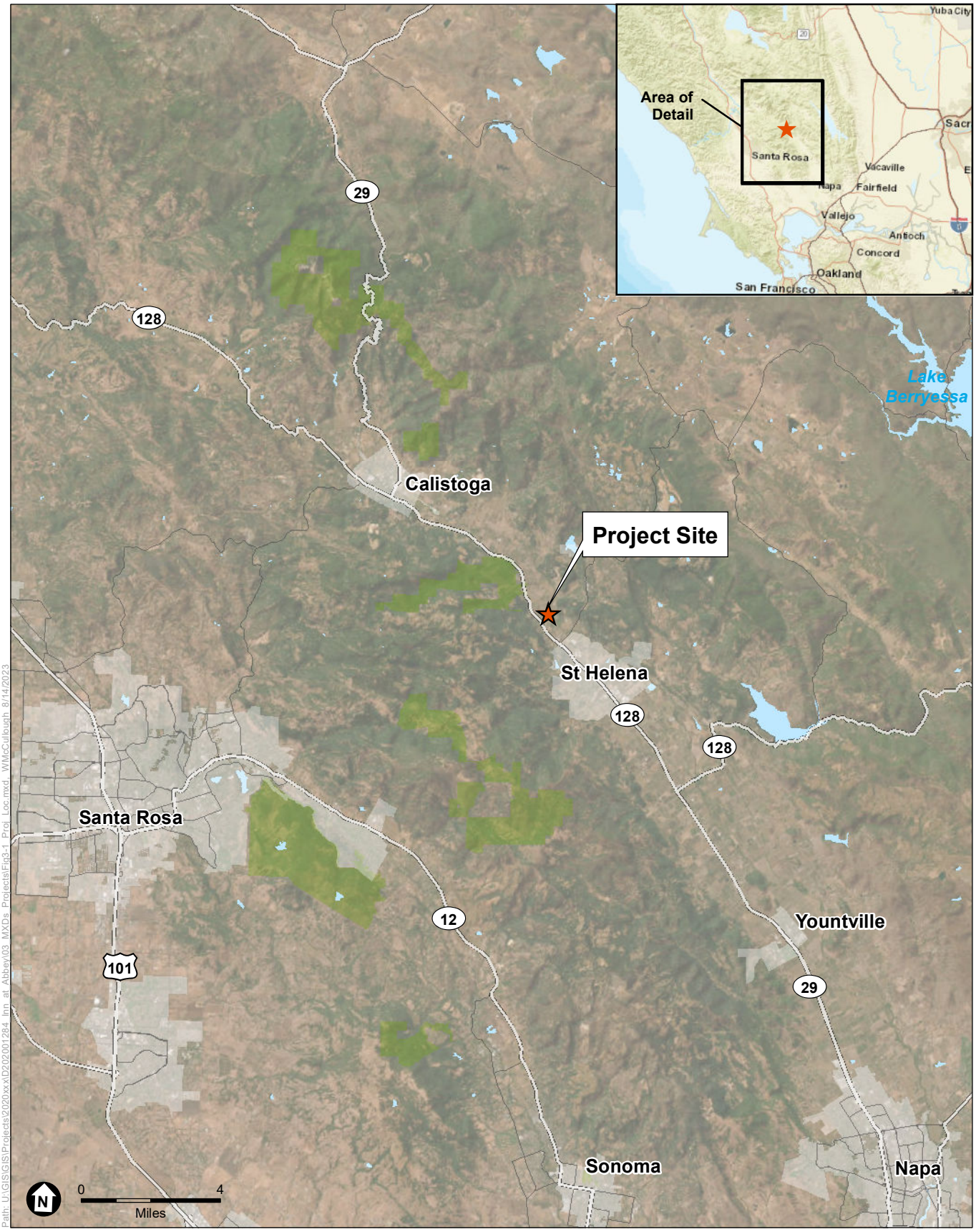
1.3 Property Location

The Project is located on a 15-acre site at Lodi Lane along SR 29, approximately 0.5 mile north of the city limits of St. Helena, in unincorporated Napa County (see **Figure 1**). The Project is comprised of six parcels that are divided into two sections separated by Lodi Lane (see **Figure 2**):

The "North Parcel" is approximately 10.27 acres and consists of the four parcels located north of Lodi Lane. The four contiguous parcels are Assessor's Parcel Numbers [APNs] 022-130-027, 022-120-028, 022-130-023, 022-130-024. The North Parcel is bounded by vineyards to the north, a commercial inn to the east, Lodi Lane to the south, and State Route (SR) 29 to the west.

The "South Parcel" is approximately 6.53 acres and consists of the two parcels located south of Lodi Lane. The two contiguous parcels are APN 022-220-028, 022-220-029. The South Parcel is bounded by Lodi Lane to the north, agricultural uses to the east and south, and SR 29 to the west.

The North Parcel and South Parcel are collectively referred to as the "Project site" in this document. The Project site is accessible from SR 29, which is located adjacent to the east of the Project site, and Lodi Lane, located between the North and South Parcels.

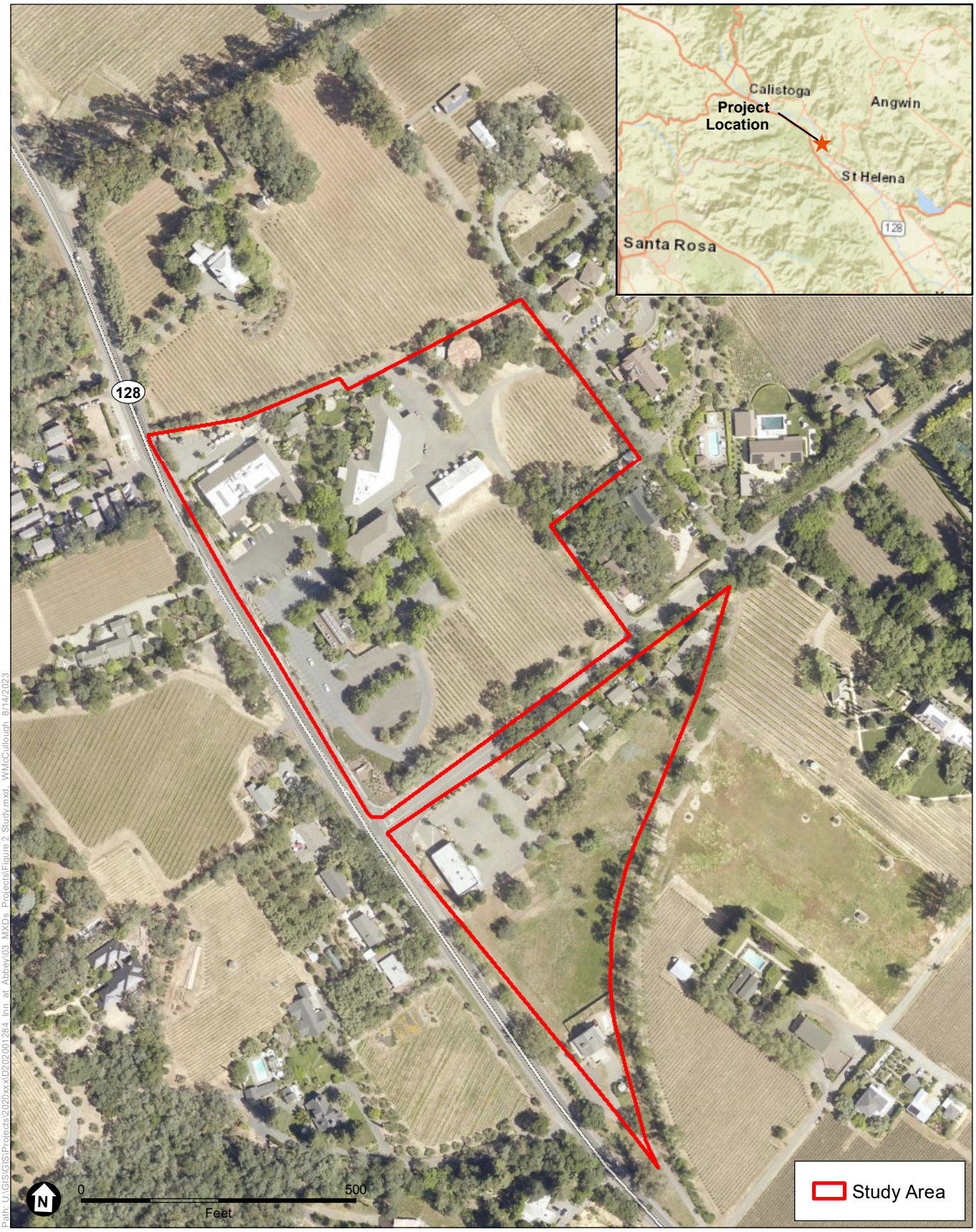


SOURCE: ESRI

Inn at the Abbey

Figure 1
Regional Location

ESA



SOURCE: ESA, 2023

Inn at the Abbey

Figure 2
Study Area

ESA

1.4 Regulatory Context

Biological resources in the study area may fall under the jurisdiction of various regulatory agencies and be subject to their regulations. In general, the greatest legal protections are provided for plant and wildlife species that are formally listed under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). The following federal, state, and local regulations, permits, and policies pertain to biological resources as they apply to the Project:

Federal Endangered Species Act

Migratory Bird Treaty Act

California Endangered Species Act

Fish and Game Code Section 3503

Native Plant Protection Act

CEQA Guidelines Section 15380

Napa County General Plan

These regulations are presented and discussed in full in **Appendix A**, *Regulatory Context.*

This page intentionally left blank

CHAPTER 2
Methods

2.1 Review of Background Information

Prior to performing the biological surveys, ESA reviewed publicly available data and subscription-based biological resource data. Data sources that assisted in this analysis included:

- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) list of plant and wildlife species documented within 10 miles of the study area (CDFW, 2023);
- The California Native Plant Society (CNPS) online database of plant species documented on the Walter Springs, Chiles Valley, Aetna Springs, Calistoga, Detert Reservoir, Yountville, Rutherford, Kenwood, and St. Helena USGS topographic quadrangles (CNPS, 2023);
- A U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) list of species that may occur in the vicinity of the study area (USFWS, 2023);
- Historic and current aerial imagery (Google Earth, 2023); and
- California Wildlife Habitat Relationships (CWHR) database.

The USFWS, CDFW, and CNPS lists are provided in **Appendix B**.

2.2 Reconnaissance Survey

ESA Field Technician Courtney Carpenter conducted a reconnaissance-level assessment of the project footprint and surrounding 500-foot buffer (study area), where accessible, study area on July 20, 2023. These are the areas in which direct or indirect impacts on biological resources could occur as a result of the Project. The reconnaissance survey was conducted to identify and map sensitive biological resources. The study area was surveyed by foot using binoculars to survey tall trees and buildings. Access to the restaurant building on site was restricted to a perimeter walk on three of the four sides due to overgrown vegetation and lack of stable walkways; however, a full review of the study area was possible to determine the potential to support sensitive and regulated biological resources.

CHAPTER 3
Environmental Setting

3.1 Vegetation Communities and Habitat Types

This section describes the vegetation communities and habitats that occur in the study area. Vegetation communities are assemblages of plant species that occur together in the same area and are defined by species composition and relative abundance. When possible, the vegetation community descriptions and terminology used are based on *A Manual of California Flora* (Sawyer et al., 2009), the CDFW *List of California Terrestrial Natural Communities Recognized by The California Natural Diversity Database* (CDFW, 2017), and the *Preliminary Description of Terrestrial Natural Communities of California* (Holland, 1986).

Habitats occurring within the study area include the following oak woodland, agriculture, ruderal/disturbed, and developed. An engineered drainage ditch also occurs within the study area. Dominant vegetation and wildlife observed during the biological surveys are provided under each of the habitat types. Comprehensive lists of plants and wildlife observed within the study area are provided in **Appendices C** and **D**.

3.1.1 Oak Woodland

Oak woodland is present within the study area on the northern area of the North Parcel, surrounding the water tank and lining the vineyards. Oak woodland is also present on the eastern border of the South Parcel. Dominant overstory vegetation on both parcels include valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*). Dominant understory vegetation on the North Parcel includes wild oats (*Avena fatua*) and pacific poison oak (*Toxicodendron diversilobum*). Vegetation on the South Parcel included sharp-leaved fluellen (*Kickxia elatine*) and *Populus* trees.

On the North Parcel, American crow (*Corvus brachyrhynchos*), California scrub-jay (*Aphelocoma californica*), pileated woodpecker (*Dryocopus pileatus*), turkey vulture (*Cathartes aura*), and Northern mockingbird (*Mimus polyglottos*) were observed using the oak woodland habitat. On the South Parcel, California ground squirrels (*Otospermophilus beecheyi*) were observed utilizing the oak woodland habitat.

3.1.2 Developed

Developed areas such as paved roads, parking lots, and buildings generally lack habitat for wildlife; however, common wildlife such as striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*) could use these areas to forage for human food waste, shelter from predators and weather, or move to and from patches of undeveloped habitat. Abandoned buildings can also support bat species such as Mexican free-tailed bat (*Tadarida brasiliensis*). Landscaped areas in an otherwise urban environment can provide cover, foraging, and nesting habitat for a variety of bird species, as well as common reptiles and small mammals, especially those that are tolerant of disturbance and human presence. Developed and otherwise disturbed areas occur along the southern portion of the North Parcel where the existing winery and parking lot are located. Manicured vegetation occurs throughout this area. The restaurant building is overgrown with vegetation that may provide suitable habitat for nesting birds.

Developed areas occur along the northern, western, and southern portions of the South Parcel including where the motel, commercial building, and parking lots are located. Vegetation around the commercial building and parking lot consists of Greek strawberry trees (*Arbutus andrachne*) and desert willow trees (*Chilopsis linearis*). Minimal vegetation around the motel. Developed habitat does not provide suitable habitat for most species, although, buildings and bridges may be used by bat species for day or night roosts and by birds for nesting.

3.1.3 Agriculture

Vineyards are present on the northeastern area of the North Parcel. Vineyards make up the majority of habitat surrounding the study area. Ground beneath vineyards is typically kept bare and is unlikely to support native plants. Wildlife, such as deer and rabbits browse on the vines; and numerous birds target the fruit and are considered agricultural pests. Vineyards can be beneficial to wildlife during hot summer periods. Turkey vulture and American crow were observed foraging in the agriculture areas.

3.1.4 Ruderal/Disturbed

Ruderal vegetation is typified by plants that are often the first to colonize a disturbed area, arising spontaneously and spreading widely without deliberate human intervention (i.e., control). In California, ruderal vegetation is often composed of an assemblage of non-native grasses and forbs (Sawyer et al., 2009; CDFW, 2023; Holland, 1986). Ruderal habitat is located on the southeast portion of the South Parcel. These areas are bordered by oak woodland and developed habitat. At the time of the July 20, 2023, reconnaissance survey, this area was dominated by mowed non-native annual grasses and upland forbs such as chicory (*Cichorium intybus*).

3.1.5 Engineered Drainage Ditch

An engineered ephemeral drainage ditch occurs within the study area on the north edge of the North Parcel between two sections of vineyard running towards Lodi Lane. The ditch appears to seasonally convey agricultural and stormwater runoff towards Lodi Lane. Dominant vegetation within and surrounding the drainage ditch includes tall flatsedge (*Cyperus eragrostis*) and coast live oak. The drainage ditch was determined to be non-jurisdictional (i.e., not a water of the U.S.

or State). This feature is outside of the proposed construction footprint. As such, no Project related impacts to the drainage ditch are anticipated.

3.2 Special-Status Species

Special-status species are legally protected under the state and federal Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are in the following categories:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under FESA (61 FR 40, February 28, 6);
- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (NPPA) (California Fish and Game Code, Section 1900 et seq.);
- CDFW designated species of special concern;
- Animals fully protected under Fish and Game Code (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (State CEQA Guidelines, Section 15380); and
- Plants considered under the CDFW and CNPS to be "rare, threatened or endangered in California" (California Rare Plant Rank [CRPR] 1A, 1B, and 2) as well as some CRPR Rank 3 and 4[1] plant species.

A list of regionally occurring special-status species in the vicinity of the study area was compiled based on the CNDDB, USFWS, and CNPS lists (**Appendix B**). The table provides a summary of the special-status species, their general habitat requirements, and an assessment of their potential to occur within the vicinity of the study area. The comprehensive list of regionally occurring special-status species is presented in **Appendix D**. The "Potential for Occurrence" category is defined as follows:

[1] CRPR 3 and 4 plants may be analyzed under CEQA §15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a CRPR 3 or 4 plant are significant even if individual project impacts are not. CRPR 3 and 4 plants may be considered regionally significant if, for example, the occurrence is located at the periphery of the species' range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate. For these reasons, CRPR 3 and 4 plants should be included in the special-status species analysis. CRPR 3 and 4 plants are also included in the California Natural Diversity Database Special Plants, Bryophytes, and Lichens List. [Refer to the current online published list available at: http://www.dfg.ca.gov/biogeodata.].

None:

- No suitable habitat is present in the study area; or
- The study area is outside of the species' known range.

Low:

- The study area is within the species' known range; however,
- The species is presumed to be extirpated from the study area or region; or
- Only marginally suitable habitat is present in the study area.

Moderate:

- Suitable habitat is present in the study area; and
- The study area is within the species' known range; but
- There are few or no recent documented occurrences of the species in the vicinity of the study area.

High:

- Suitable habitat is present in the study area; and
- The study area is within the species' known range; and
- There are recent documented occurrences of the species in the vicinity of the study area.

Species without the potential to occur or with low potential to occur are not discussed further. Only special-status species with moderate or high potential to occur are discussed, below. **Table 1** summarizes the special-status species with a moderate to high potential to occur within the study area.

TABLE 1

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA[2]

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Study area
Plants				
Amorpha californica var. *napensis*	Napa false indigo	--/--/1B.2	Openings in broad-leafed forest, chaparral, cismontane woodland.	**Moderate:** Nearest occurrence record approximately 0.5 mile west of the study area. Not observed during July 2023 site visit, but oak woodland portion of site provides potentially suitable habitat.
Brodiaea leptandra	Narrow-anthered brodiaea	--/--/1B.2	Openings in broad-leafed forest, chaparral, lower montane coniferous forest.	**Moderate:** Nearest occurrence record approximately 0.5 mile west of the study area. Not observed during July 2023 site visit, but oak woodland portion of site provides potentially suitable habitat.
Layia septentrionalis	Colusa layia	--/--/1B.2	Annual herb found in chaparral, cismontane woodland, and valley and foothill grassland, which is occasionally on sandy, serpentine substrate, from 328 to 3,592 feet (100 to 1,095 meters). Blooms April through May.	**Moderate**. The oak woodland provides potentially suitable habitat for this species.
Trichostema ruygtii	Napa bluecurls	--/--/1B.2	Annual herb found in chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools from 98 to 2,231 feet (30 to 680 meters). Blooms June through October.	**Moderate.** The oak woodland within the study area provides potentially suitable habitat for this species.
Birds				
Elanus leucurus	White-tailed kite	--/FP/--	Found throughout California in a range of habitats including marshes, grassland, and oak woodlands, and commonly perches on top of treetops, wires, and fence posts. Typically nests in the upper third of trees that can be anywhere from 10 feet to 160 feet tall, generally in open country and growing in isolation.	**Moderate.** Study area provides suitable nesting and foraging habitat.
Progne subis	Purple martin	--/CSC/--	Inhabits woodlands and low elevation coniferous forest of Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and Monterey pine (*Pinus radiata*). Nests primarily in old woodpecker cavities, also in human-made structures. Nest often located in tall, isolated tree/ snag.	**Moderate**. The study area provides potentially suitable nesting habitat for this species. Woodpeckers were observed in Study area.

[2] A full evaluation of special-status species not identified in this table is provided in Appendix D, Regionally Occurring Special-Status Species.

TABLE 1

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA[2]

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Study area
Mammals				
Antrozous pallidus	Pallid bat	--/CSC/High	Inhabits oak woodland, savannah, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	**Moderate**. The developed areas associated with the restaurant building may provide suitable roosting habitat.
Corynorhinus townsendii	Townsend's big-eared bat	--/CSC/High	Throughout California in a wide variety of habitats. Most common in mesic sites. Maternity roosts are found in caves, tunnels, mines, or other human-made structures. May use separate sites for night, day, hibernation, or maternity roosts.	**Moderate**. The developed areas associated with the restaurant building may provide suitable roosting habitat.

KEY:

Western Bat Working Group:
High = Highest priority for funding, planning, and conservation actions
.

State: (CDFW)
ST = Listed as Threatened by the State of California
CSC = California Species of Special Concern
FP = CDFW Fully Protected Species

California Rare Plant Rank (CRPR):
Rank 1B = Plants rare, threatened, or endangered in California and elsewhere

3.2.1 Special-Status Plants.

Napa False Indigo (*Amorpha californica* var. *napensis*)

Napa false indigo has a CRPR of 1B.2.

Napa false indigo is flowering plant found in openings in forest, woodland or in chaparral from 98 to 2,411 feet (30 to 735 meters). The blooming period for this species is from April to June. The oak woodland within the study area provides habitat for Napa false indigo. The closest occurrence record for this species is located approximately 0.5 mile west of the study area (Occurrence No. 60) (CDFW, 2023). While this species was not observed within the study area, this species could potentially be present within the study area and not have been detected. Therefore, this species has a moderate potential to occur within the study area.

Narrow-anthered Brodiaea (*Brodiaea leptandra*)

Narrow-anthered brodiaea has a CRPR of 1B.2.

Narrow-anthered brodiaea is a perennial herb found in broad-leafed forest, chaparral, lower montane coniferous forest in volcanic substrates from 98 to 1,935 feet (30 to 590 meters). The blooming period is from May through July. The closest occurrence record for this species is this species is located approximately 0.5 mile west of the study area (Occurrence No. 39). The oak woodland within the study area provides potentially suitable habitat for narrow-anthered

brodiaea. While this species was not observed within the study area, this species could potentially be present within the study area and not have been detected. Therefore, this species has a moderate potential to occur within the study area.

Colusa Layia (*Layia septentrionalis*)

Colusa layia has a CRPR of 1B.2.

Colusa layia is an annual herb found in chaparral, cismontane woodland, and valley and foothill grassland, which is occasionally on sandy, serpentine substrate from 328 to 3,593 feet (100 to 1,095 meters). The blooming period is from April through May. The oak woodland within the study area provides potential habitat for Colusa layia. While this species was not observed within the study area, this species could potentially be present within the study area and not have been detected. Therefore, this species has a moderate potential to occur within the study area.

Napa Bluecurls (*Trichostema ruygtii*)

Napa bluecurls has a CRPR of 1B.2.

Napa bluecurls is an annual herb found in chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools from 98 to 2,231 feet (30 to 680 meters). The blooming period for this species is from June through October. The oak woodland within the study area provides habitat for Napa bluecurls. While this species was not observed within the study area, this species could potentially be present within the study area and not have been detected. Therefore, this species has a moderate potential to occur within the study area.

3.2.2 Special-Status Birds

White-tailed Kite (*Elanus leucurus*)

White-tailed kite is a CDFW Fully Protected species.

This species is found throughout California in a range of habitats including marshes, grassland, and oak woodlands, and commonly perches on top of treetops, wires, and fence posts. The white-tailed kite typically nests in the upper third of trees that can be anywhere from 10 feet to 160 feet tall, generally in open country and growing in isolation.

Trees within the study area provide suitable nesting habitat for white-tailed kites. Vineyards and undeveloped ruderal areas provide potential foraging habitat. While there are no CNDDB records for this species within 10 miles of the area, there are several research-grade iNaturalist records for white-tailed kite throughout Napa County (iNaturalist, 2023). This species is also known to nest within the county (CDFW, 2023). This species has a moderate potential to nest and forage within the study area.

Purple Martin (*Progne subis*)

Purple martin is a California species of special concern.

Purple martin nests in tree cavities, crevices in rocks, and abandoned woodpecker holes in the vicinity of water. This species inhabits woodlands, low elevation coniferous forest of Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and Monterey pine (*Pinus radiata*). This species forages over fields, water, and marshes.

There are three CNDDB records for this species within 10 miles of the study area. The nearest CNDDB records were recorded in 1994 and 1995 (Occurrence No. 14 and 225) study area (CDFW, 2023). Both records occur approximately 3 miles east of the study area and describe nesting colonies in Douglas fir snags from a 1978 fire. Trees in the study area, specifically in the oak woodland on the North Parcel were observed to have cavities that would provide potential nesting habitat for this species. No purple martins were observed during the July 2023 biological survey of the study area. This species has a moderate potential to nest within the study area during the nesting season.

Other Nesting Birds

Although many native birds are not considered special-status species, their nests are protected by the MBTA and the California Fish and Game Code. Many resident and migratory birds could nest in existing trees, shrubs, and ruderal vegetation or in existing buildings in the study area. These species include locally common species such as Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), American crow, American robin (*Turdus migratorius*), red-tailed hawk (*Buteo jamaicensis*), bushtit (*Psaltriparus minimus*), dark-eyed junco (*Junco hyemalis*), and northern mockingbird, among many others.

3.2.6 Special-Status Mammals

Pallid Bat (*Antrozous pallidus*)

Pallid bat is a California species of special concern and ranks High on the Western Bat Working Group (WBWG) Matrix for this region.

Pallid bat occurs throughout California except in parts of the high Sierra and the northwestern corner of the state (Zeiner et al., 1990). The pallid bat inhabits a variety of habitats, such as grasslands, shrublands, woodlands, and forests; however, it is most abundant in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups, or gregariously (WBWG, 2017). Roosts include caves, crevices in rocky outcrops and cliffs, mines, trees, and various man-made structures (e.g., bridges, barns, porches) with unobstructed entrances/exists that are high above the ground, warm, and inaccessible to terrestrial predators. Year-to-year and night-to-night roost reuse is common; however, bats may switch day roosts on a daily and seasonal basis.

There are multiple CNDDB records for this species within 10 miles of the study area. The nearest recent (within the past 50 years), extant record is from 2017 (Occurrence No. 436) near Napa River under the Dunaweal Lane Bridge. The record states that the bridge was used as a night roost by 4 adults (CDFW, 2023). Trees and buildings within the study area provide potential roosting habitat for this species. No bats of any species were observed during the July 2023 biological survey. This species has a moderate potential to occur within the study area.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

Townsend's big-eared bat is a California species of special concern and ranks High on the WBWG Matrix for this region.

Townsend's big-eared bat inhabits coniferous forests, mixed mesophytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat (WBWG, 2017). Their typical habitat is arid western desert scrub and pine forest regions. Maternity roosting locations for this species through the west are strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines, tunnels, or other human-made structures. This species may use separate sites for night, day, hibernation, or maternity roosts.

There are 5 CNDDB records for this species within 10 miles of the study area. The nearest record (Occurrence No. 450) is from 1955 and is less than a mile southeast of the study area. The occurrence states that 20 Townsend's big-eared bats were observed hibernating in a wooden barn nearby on the Forni Ranch. The trees within the oak woodland and riparian woodland and the restaurant building associated with the developed areas within the study area provide roosting habitat for this species. No bats were observed during July 2023 biological survey. This species has a moderate potential to roost within the study area.

3.3 Wildlife Movement Corridors

Wildlife movement corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or by areas of human disturbance or urban development. Topography and other natural factors in combination with urbanization can fragment or separate large open-space areas. The fragmentation of natural habitat can create isolated "islands" of vegetation and habitat that may not provide sufficient area to accommodate sustainable populations and can adversely impact genetic and species diversity. The retention of wildlife movement corridors ameliorates the effects of such fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to be replenished. Such movement may also promote genetic exchange between separated populations.

The study area is not part of major or local wildlife corridor/travel routes according to the CDFW's Essential Habitat Connectivity natural landscape blocks. Additionally, the study area is bordered in all directions by established wineries, roads, and agricultural fields.

3.4 Critical Habitat for Listed Fish and Wildlife Species

The USFWS defines the term critical habitat in the federal Endangered Species Act as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The study area is not within designated critical habitat for any listed wildlife or plants.

3.5 Sensitive Natural Communities

Sensitive natural communities are designated by various resource agencies such as CDFW, or in local policies and regulations; are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent or distribution; and are considered threatened enough to warrant some level of protection. CDFW tracks communities of conservation concern through its *California Sensitive Natural Community List* (CDFW, 2019). Natural communities with ranks of S1 to S3 are considered sensitive natural communities, to be addressed in the environmental review processes of CEQA and its equivalents.

Oak woodland (Valley Oak Woodland and Forest, *Quercus lobata – Quercus agrifolia*/grass) was observed within the study area, as described in Section 3.1.1. While some oak trees near the Stone Building are proposed for removal, habitat identified as oak woodland would not be impacted. No other sensitive natural communities with a rarity ranking of S1 to S3, or communities considered sensitive as marked with a "Y" on the *California Sensitive Natural Community List*, were identified in the study area.

3.6 Protected Trees

A tree removal plan and landscape plan have been prepared for the Project. The Project would retain many of the existing trees on the Project Site but would require removal of approximately 97 trees, including 73 trees on the North Parcel and 24 trees on the South Parcel. The trees to be removed are mainly concentrated along the eastern side of the North Parcel (along SR 29) where the new North Hotel Building would be constructed. Most trees proposed for removal are non-native ornamental trees. Some oak trees are also proposed for removal. The Napa County General Plan Policy CON-24 describes measures to protect sensitive trees (see Appendix A for full text of measure).

CHAPTER 4
Impacts and Recommended Measures

Impacts on biological resources are identified and evaluated based on relevant CEQA and local standards, policies, and guidelines; on the likelihood that these resources may be present within the study area; and on the likely effects that project development may have on these resources. The thresholds used to determine the significance of impacts related to biological resources are based on Appendix G of the *CEQA Guidelines*. Special-status species that have no or low potential to occur in the study area (as presented in **Error! Reference source not found.** A) are not considered in the impact analysis. The below-outlined measures would be implemented to avoid and minimize potential Project impacts on special-status wildlife, plants, and protected trees.

4.1 Special-Status Species

The study area does not include suitable habitat, or is outside of the known geographic or elevation range, for many of the terrestrial species documented in the CNDDB, USFWS, and CNPS searches. The study area includes suitable habitat for the following species and is within the species' known range: Napa false indigo, narrow-anthered brodiaea, Colusa layia, Napa bluecurls, white-tailed kite, purple martin, pallid bat, and Townsend's big-eared bat. Therefore, the following analysis is limited to potential impacts on these species, which have at least a moderate potential to occur in the study area (refer to **Table 1**).

4.1.1 Special-Status Plants

Construction-related direct impacts to special-status plant species such as Napa false indigo, narrow-anthered brodiaea, Colusa layia, and Napa bluecurls could result from ground disturbance, including removal of trees and other vegetation and staging of equipment, within undisturbed, vegetated portions of the project area. While construction is expected to primarily impact previously developed or otherwise disturbed areas, if activities result in removal of special-status plant species this impact would be potentially significant. To reduce the potentially significant construction-related impacts, the following measure is recommended:

> **Recommendation BIO-1a: Protocol Level Surveys for Special-Status Plants.**
>
> Prior to earth disturbing activities within oak woodland habitat in the North Parcel and undeveloped lands on the South Parcel, a qualified botanist shall conduct a rare plant survey of the construction disturbance area within the appropriate bloom period for Napa false indigo, narrow-anthered brodiaea, Colusa layia, and Napa bluecurls. Surveys and reporting shall be conducted following the current California Department of Fish and Wildlife (CDFW) protocol. In the absence of rare plants, no further mitigation is needed. If special-status plant species are found and plants cannot be avoided, then Measure BIO-1b shall be implemented to avoid, minimize and compensate for rare plant impacts.

Recommendation BIO-1b: Avoidance, Minimization, and Compensation for Impacts to Special-status Plants.

If special-status plant populations are identified and cannot be avoided, the Project Applicant shall confer with CDFW to coordinate relocation of special-status plants. In advance of plant relocation, the applicant shall prepare a Mitigation and Monitoring Plan (Plan) that describes the methods and specifies the success criteria and monitoring period for transplanted plants and related long-term protection and management of transplanted or planted individuals. This plan shall be subject to review and approval by the Napa County Planning, Building, and Environmental Services Department prior to the initiation of any Project activities that will impact the special-status plant(s). The Plan shall include the following provisions:

1. Special-status plants that would be impacted by the Project shall be relocated within suitable habitat on site. This can be done either through salvage and transplanting on-site or by collection and propagation of seeds or other vegetative material for on-site planting. Plant relocation shall be performed under the supervision of a qualified biologist.

2. The Plan shall detail relocation methods or appropriate replacement ratios and methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures that shall be implemented if the initial mitigation fails. The Plan shall be developed in coordination with the Napa County Planning, Building, and Environmental Services Department and appropriate agencies (depending upon plant listing status) prior to the start of earth disturbing activities. At a minimum, success criteria shall require mitigation areas to provide equal or better habitat and populations than the impacted area (e.g., at least 75% survival of transplanted, planted, or seeded individuals; minimal weeds within the planting area, and plants in fair or better condition at the completion of the restoration effort). Where appropriate, depending upon the target species, restoration efforts shall require maintenance of the restored areas, for example through irrigation, weeding, and replacement plantings when annual performance thresholds are not met.

3. If compensatory restoration or reintroduction of plants or seed is implemented, the Project Applicant shall maintain and monitor the relocation sites and/or restored areas for 5 years following the completion of construction and restoration activities. The applicant shall submit annual monitoring reports to the Napa County Planning, Building, and Environmental Services Department, at the completion of restoration. Monitoring reports shall include photo-documentation, planting specifications, a site layout map, descriptions of materials used, and justification for any deviations from the Plan. Success criteria for restored areas shall be identified in the Plan.

4.1.2 Nesting Birds

Construction-related direct impacts on nesting birds protected by the Migratory Bird Treaty Act could result from the removal of trees and vegetation and/or demolition of buildings while an active bird nest is present. In addition, earth moving, operation of heavy equipment, and increased human presence could result in noise, vibration, and visual disturbance. These conditions could indirectly result in nest failure (disturbance, avoidance, or abandonment that leads to unsuccessful reproduction), or could cause flight behavior that would expose an adult or its young to predators. These activities could cause birds that have established a nest before the start of construction to

change their behavior or even abandon an active nest, putting their eggs and nestlings at risk for mortality. Operational activities are not expected to impact nesting birds as the existing site uses would not significantly change.

Because of the potential for nest failure during the construction activities described above, this impact would be **potentially significant**. Generally, nest failure would be a violation of CFGC Sections 3503–3513. Impacts during the non-breeding season generally are not considered significant, primarily because of the birds' mobility and ability to access other comparable foraging habitat in the region.

To reduce the potentially significant construction-related impact, the following measure is recommended:

Recommendation BIO-2: Pre-construction survey for breeding birds.

For earth-disturbing activities commencing between February 1 and August 31, (which coincides with the grading season of April 1 through October 15 – NCC Section 18.108.070.L, and bird breeding and nesting seasons), a qualified biologist (defined as knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the Project site and experienced with conducting pre-construction nesting bird and raptor surveys as determined by the Napa County Planning Division) shall conduct pre-construction surveys for nesting birds and raptors, within all suitable habitat on the Project site, and all suitable nesting habitat within 500 feet of the Project site. The preconstruction survey shall be conducted no earlier than seven (7) days prior to when vegetation removal and ground disturbing activities are to commence. Should ground disturbance commence later than seven (7) days from the survey date, or if there is a lapse in Project activities of seven (7) days or more during the nesting season surveys shall be repeated. A copy of the survey report shall be provided to the Napa County Planning Division and the CDFW prior to commencement of work.

In the event that the survey finds active nests, the qualified biologist shall determine adequate no-disturbance buffer distances from all active nests based on the species and in consultation with the County Planning Division and the U.S. Fish and Wildlife Service (USFWS) and/or CDFW prior to initiation of Project activities.

All active nests shall be monitored during construction hours by a qualified biologist for the first week during Project activities to ensure the established buffer distances are adequate to avoid disturbances to the nest. If the qualified biologist observes bird behavior that may indicate nest disturbance, the qualified biologist shall have the authority to immediately cease Project activities. In this event, the qualified biologist shall consult with CDFW regarding larger buffer distances, and buffer zones shall be refenced accordingly, prior to resuming Project activities. If larger buffer distances cannot be established, Project activities shall be delayed until the nest is no longer active (i.e. the young have fledged the nest and can feed independently, or the nest fails due to natural causes), as determined by the qualified biologist.

Alternative methods aimed at flushing out nesting birds prior to pre-construction surveys, whether physical (i.e., removing or disturbing nests by physically disturbing trees with construction equipment), audible (i.e., utilizing sirens or bird cannons), or chemical (i.e., spraying nesting birds or their habitats) would be considered an impact to nesting birds and are prohibited. Any act associated with flushing birds from Project areas shall undergo consultation with the

Napa County Planning Division, USFWS and/or CDFW prior to any activity that could disturb nesting birds.

4.1.3 Roosting Bats

The project could impact special-status bats if they are present in buildings that would be demolished or in mature trees that would be removed or pruned to accommodate project construction. Special-status bat species that have the potential to occur in the project area include pallid bat and Townsend's big-eared bat. If tree removal or building demolition were to occur during periods of winter torpor or maternity roosting, any bats present would likely not survive the disturbance (Tuttle, 1991). The impact of these disturbances would be **potentially significant**.

To reduce the potentially significant construction-related impact, the following measure is recommended:

Recommendation BIO-3: Roosting Bat Surveys

In advance of tree removal and building demolition, a qualified biologist shall conduct a pre-construction survey for special-status bats to characterize potential bat habitat and identify active roost sites within 100 feet of the Project site. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the Project or within a 100-foot buffer zone from these areas, the following measures shall be implemented:

- Removal of trees and structures with active roosts shall occur when bats are active, between March 1 and April 15 inclusive and between September 15 and October 15 inclusive. To the extent feasible, removal shall occur outside of bat maternity roosting season (April 15 to August 31 inclusive) and outside of the months of winter torpor (October 16 to February 28 inclusive).
- If removing trees and structures during the periods when bats are active is not feasible and active bat roosts being used for maternity or hibernation purposes are found on or in the immediate vicinity of the Project area where tree and structure removal is planned, a 100-foot no-disturbance buffer shall be established around these roost sites until the qualified biologist has determined that they are no longer active.
- The qualified biologist shall be present during removal of trees and structures when active or potentially active bat roosts not being used for maternity or hibernation purposes are present. Trees and structures with active roosts shall be removed only when no rain is occurring and rain is not forecast to occur for 3 days following removal of the roost, and when daytime temperatures are at least 50 degrees Fahrenheit.
- Removal of trees with active or potentially active roost sites note being used for maternity or hibernation purposes shall follow a two-step removal process:

  (1) On the first day of tree removal and under the supervision of the qualified biologist, branches and limbs that do not contain cavities or fissures in which bats could roost shall be cut only using chainsaws or non-motorized equipment. Removal of the canopy makes the tree unappealing for bats to return that evening to roost.

(2) On the following day and under the supervision of the qualified biologist, after confirmation that bats have not returned, the remainder of the tree may be removed, using either chain saws or other equipment (e.g., excavator or backhoe).

Structures that contain or are suspected to contain active bat roosts, but that are not being used for maternity or hibernation purposes, shall be dismantled under the supervision of the qualified biologist in the evening, after bats have emerged from the roost to forage. The structures shall be partially dismantled to substantially change roost conditions, causing the bats to abandon and not return to the roost.

4.2 Protected Trees

General Plan Conservation Element Policy CON-24 lists trees and land cover types (primarily oak species and oak woodlands) that the County desires to retain. The Project would retain many of the existing trees on the Project site but would require removal of approximately 97 trees, including 73 trees on the North Parcel and 24 trees on the South Parcel (Figure 3-22). A tree removal plan and landscape plan have been prepared for the Project. The trees to be removed are mainly concentrated along the eastern side of the North Parcel (along SR 29) where the new North Hotel Building would be constructed. The majority of trees proposed for removal are non-native ornamental trees. Several oak trees near the existing Stone Building are also proposed for removal. While these trees are not within study areas identified as oak woodland habitat, they may be remnant trees from historical oak woodlands.

The Napa County General Plan Policy CON-24, as amended in Ordinance No. 2018-01, requires that projects provide replacement of lost oak woodlands or preservation of like habitat at a minimum 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible. Within the Agricultural Watershed zoning district, require replacement of lost oak woodlands or permanent preservation of like habitat at a minimum 3:1 ratio when retention of existing vegetation is found to be infeasible, except where the Napa County Watershed and Oak Woodland Protection Initiative of 2018 provides for an exception to this requirement. The Project is not located within the Agricultural Watershed zoning district and is not located along streams or wetlands.

Removal of oak trees would be potentially significant. To reduce the potentially significant construction-related impact, the following measure is recommended:

Recommendation BIO-4: Mitigate for Oak Tree Removal.

The Project Applicant shall mitigate impacts to oak trees by mitigating for removal of oak trees at a minimum 2:1 ratio either by replacing removed oak trees or permanent preservation of comparable habitat.

CHAPTER 5
References and Report Preparation

5.1 References

Calflora. 2023. The Calflora Database: Information on California Plants for Education, Research, and Conservation. Berkeley, California. Available: http://www.calflora.org/. Accessed July 9, 2023.

California Department of Fish and Wildlife (CDFW), 2019. Natural Communities–Natural Communities List Arranged Alphabetically by Life Form, November 2019. Available at https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/List. Accessed in July 2023.

California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Data Base (CNDDB: Walter Springs, Chiles Valley, Aetna Springs, Calistoga, Detert Reservoir, Yountville, Rutherford, Kenwood, and St. Helena. U.S. Geological Survey (USGS) 7.5-minute series quadrangles (quadrangles)). Accessed July 9, 2023.

California Native Plant Society (CNPS). 2023. Inventory of Rare and Endangered Plants (online edition, v8-01a). California Native Plant Society. Sacramento, CA. Available: http://rareplants.cnps.org/. Accessed July 9, 2023.

Google Earth. 2023. "Napa County" 38 31'29" N 122 29'46" W. Google Earth. Accessed July 9, 2023.

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Sacramento, CA: California Department of Fish and Game.

iNaturalist. Available from https://www.inaturalist.org. Accessed July 9, 2023.

Napa County, 2008. *Napa County General Plan*, adopted by Board of Supervisors Resolution 08-86, June 3, 2008, as amended through February 2022.

Sawyer, J. O., Keeler-Wolf, T., & Evens, J. (2009). *A Manual of California Vegetation* (Second). California Native Plant Society Press.

Tuttle, M., How North America Bats Are at Their Most Vulnerable during Hibernation and Migration, *BATS Magazine* 9(3), fall 1991. Available at http://www.batcon.org/resources/media-education/bats-magazine/bat_article/492. Accessed January 5, 2018.

U.S. Fish and Wildlife Service (USFWS). 2023. List of Threatened and Endangered Species that may Occur in your Proposed Project Location or may be Affected by your Proposed Project. Project Code: 2023-0115172. August 10, 2023.

Western Bat Working Group (WBWG). 2017. *Western Bat Working Group Species Accounts for all bats*. http://wbwg.org/western-bat-species/.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990, California's Wildlife, Volumes I-III, California Department of Fish and Game, Sacramento, CA.

5.2 Document Preparation

Prepared by: Courtney Carpenter, *Field Technician*
Sharon Melesurgo, *Technical Specialist*
Environmental Science Associates
2600 Capitol Avenue, Suite 200
Sacramento, CA 95816

Appendix A
Regulatory Context

Federal

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) (16 U.S. Code [USC] 153 et seq.) and the Migratory Bird Treaty Act (MBTA) (16 USC 703–711). These regulations are described below.

Federal Endangered Species Act. Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC §1533(c)). Two federal agencies oversee the FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. Section 7 of the FESA mandates that federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the "take"[3] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Section 10 requires the issuance of an "incidental take" permit before any public or private action may be taken that could take an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would offset the take of individuals that may occur, incidental to implementation of a proposed project, by providing for the protection of the affected species.

Pursuant to the requirements of the FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project area and whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536(3), (4)). No federal actions apply to the proposed SMZC GUP project.

Critical Habitat. The USFWS designates critical habitat for listed species under FESA. Critical habitat designations are specific areas within the geographic region that are occupied by a listed species that are determined to be critical to its survival and recovery in accordance with FESA. Federal entities issuing permits or acting as a lead agency must show that their actions do not negatively affect the critical habitat to the extent that it impedes the recovery of the species.

Protection of Nesting Birds - Migratory Bird Treaty Act. The MBTA (16 United States Code Section 703 Supp. I, 1989) generally prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except as provided by the statute.

[3] Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

State

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) administers a number of laws and programs designed to protect fish and wildlife resources under the Fish and Game Code (FGC), such as the California Endangered Species Act (FGC Section 2050, et seq.), Fully Protected Species (FGC Section 3511), Native Plant Protection Act (FGC Sections 1900 to 1913) and Lake or Streambed Alteration Agreement Program (FGC Sections 1600 to 1616). These regulations are described below.

California Endangered Species Act. In 1984, the State of California implemented the California Endangered Species Act (CESA) which prohibits the take of State-listed endangered and threatened species; although, habitat destruction is not included in the State's definition of take. Section 2090 requires State agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFW administers the act and authorizes take through California Fish and Game Code Section 2081 agreements (except for designated "fully protected species," see below). Unlike its federal counterpart, CESA protections apply to candidate species that have been petitioned for listing.

Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (see below).

Fish and Game Code Section 3503. FGC Section 3503.5 provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. Construction activities that result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment and/or reproductive failure are considered a "take" by CDFW. Any loss of eggs, nests, or young or any activities resulting in nest abandonment would constitute a significant project impact.

Native Plant Protection Act. FGC Sections 1900–1913, also known as the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Vascular plants that are identified as rare by the CNPS, but which may have no designated status or protection under federal or State endangered species legislation, are defined as follows:

List 1A: Plants Presumed Extinct.

List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.

List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.

List 3: Plants about Which More Information is Needed – A Review List.

List 4: Plants of Limited Distribution – A Watch List.

In general, plants appearing on CNPS List 1A, 1B, or 2 are considered to meet the criteria of CEQA Guidelines Section 15380 and effects to these species are considered "significant" in this EIR. Additionally, plants listed on CNPS List 1A, 1B or 2 meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (California Endangered Species Act) of the California Fish and Game Code.

Species of Special Concern. CDFW maintains lists for candidate-endangered species and candidate-threatened species. California candidate species are afforded the same level of protection as listed species. California also designates species of special concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or fully protected species, but may be added to official lists in the future. CDFW intends the species of special concern list to be a management tool for consideration in future land use decisions. The *Special Plants* list can be found online at: http://www.dfg.ca.gov/biogeodata/cnddb.pdfs.spplants.pdf; and the *Special Animals* list may be found online at: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and State statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria. These criteria have been modeled after the definition of FESA and the section of Fish and Game Code discussing rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a candidate species that has not yet been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species protection.

CEQA also specifies the protection of other locally or regionally significant resources, including natural communities or habitats. Although natural communities do not presently have legal protection, CEQA requires an assessment of such communities and potential project impacts. Natural communities that are identified as sensitive in the CNDDB are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

Napa County General Plan

The Napa County General Plan serves as a broad framework for planning and future development within Napa County. The Conservation Element of the Napa County General Plan includes the following goals and policies related to conservation of natural resources (Napa County, 2008).

Policy CON-13: The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

a) Maintain the following essentials for fish and wildlife resources:

1) Sufficient dissolved oxygen in the water.

2) Adequate amounts of proper food.

3) Adequate amounts of feeding, escape, and nesting habitat.

4) Proper temperature through maintenance and enhancement of streamside vegetation, volume of flows, and velocity of water.

b) Ensure that water development projects provide an adequate release flow of water to preserve fish populations.

c) Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife and special-status species and maintain the watersheds, especially stream side areas, in good condition.

d) Provide protection for habitat supporting special-status species through buffering or other means.

e) Provide replacement habitat of like quantity and quality on- or off-site for special-status species to mitigate impacts to special-status species.

f) Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.

g) Require temporary or permanent buffers of adequate size (based on the requirements of the subject special-status species) to avoid nest abandonment by birds and raptors associated with construction and site development activities.

h) Demonstrate compliance with applicable provisions and regulations of recovery plans for federally listed species

Policy CON-16: The County shall require a biological resources evaluation for discretionary projects in areas identified to contain or potentially contain special-status species based upon data provided in the Baseline Data Report (BDR), California Natural Diversity Database (CNDDB), or other technical materials. This evaluation shall be conducted prior to the approval of any earthmoving activities. The County shall also encourage the development of programs to protect special-status species and disseminate updated information to state and federal resource agencies. [Implemented by Action Item CON NR-5]

Policy CON-18: To reduce impacts on habitat conservation and connectivity:

a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity.

b) Outside of sensitive domestic water supply drainages, streamlined permitting procedures should be instituted for new vineyard projects that voluntarily retain valuable habitat and connectivity, including generous setbacks from streams and buffers around ecologically sensitive areas.

c) Preservation of habitat and connectivity of adequate size, quality, and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specifics needs of the species.

d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.

e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact caused by the new vineyard development.

f) The County shall disseminate information about impacts that fencing has on wildlife movement in wild land areas of the County and encourage property owners to use permeable fencing.

g) The County shall develop a program to improve and continually update its database of biological information, including identifying threats to wildlife habitat and barriers to wildlife movement.

h) Support public acquisition, conservation easements, in-lieu fees where on-site mitigation is infeasible, and/or other measures to ensure long-term protection of wildlife movement areas.

Policy CON-24[4]: Pursuant to the Napa County Watershed and Oak Woodland Protection Initiative of 2018, require a permit for any oak removal within the Agricultural Watershed Continue to maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following:

a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects.

b) Comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and

[4] Shown as amended in Napa County Oak Watershed and Oak Woodland Protection Initiative of 2018, Ordinance No. 2018-01.

retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals.

c) Provide replacement of lost oak woodlands or preservation of like habitat at a minimum 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible. Within the Agricultural Watershed zoning district, require replacement of lost oak woodlands or permanent preservation of like habitat at a minimum 3:1 ratio when retention of existing vegetation is found to be infeasible, except where the Napa County Watershed and Oak Woodland Protection Initiative of 2018 provides for an exception to this requirement.

d) Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil protection, and soil production be left standing.

e) Maintain, to the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub, and live oaks are common associations.

f) Encourage and support the County Agricultural Commission's enforcement of state and federal regulations concerning Sudden Oak Death and similar future threats to woodlands

Appendix B
Agency Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: BIOS selection

Inn at the Abbey Project: 10 Mile CNDDB Selection

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G4G5T2	S2	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus claranus Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Endangered	G1	S1	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calystegia collina ssp. oxyphylla Mt. Saint Helena morning-glory	PDCON04032	None	None	G4T3	S3	4.2
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus divergens Calistoga ceanothus	PDRHA04240	None	None	G2	S2	1B.2
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ceanothus sonomensis Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S3	SSC
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G2G3	S2S3	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
Eryngium constancei Loch Lomond button-celery	PDAPI0Z0W0	Endangered	Endangered	G1	S1	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Harmonia hallii Hall's harmonia	PDAST650A0	None	None	G2?	S2?	1B.2
Hesperolinon bicarpellatum two-carpellate western flax	PDLIN01020	None	None	G2	S2	1B.2
Hesperolinon sharsmithiae Sharsmith's western flax	PDLIN010E0	None	None	G2Q	S2	1B.2
Hydroporus leechi Leech's skyline diving beetle	IICOL55040	None	None	G1?	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Juncus luciensis Santa Lucia dwarf rush	PMJUN013J0	None	None	G3	S3	1B.2
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
Layia septentrionalis Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
Limnanthes floccosa ssp. floccosa woolly meadowfoam	PDLIM02043	None	None	G4T4	S3	4.2
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Lupinus sericatus Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nannopterum auritum double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia rosulata Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G5T2Q	S2	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T3Q	S3	
Penstemon newberryi var. sonomensis Sonoma beardtongue	PDSCR1L483	None	None	G4T3	S3	1B.3
Plagiobothrys strictus Calistoga popcornflower	PDBOR0V120	Endangered	Threatened	G1	S1	1B.1
Poa napensis Napa blue grass	PMPOA4Z1R0	Endangered	Endangered	G1	S1	1B.1
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana boylii pop. 1	AAABH01051	None	None	G3T4	S4	SSC
foothill yellow-legged frog - north coast DPS						
Rana draytonii	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California red-legged frog						
Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Serpentine Bunchgrass						
Sidalcea hickmanii ssp. napensis	PDMAL110A6	None	None	G3T1	S1	1B.1
Napa checkerbloom						
Sidalcea oregana ssp. hydrophila	PDMAL110K2	None	None	G5T2	S2	1B.2
marsh checkerbloom						
Sidalcea oregana ssp. valida	PDMAL110K5	Endangered	Endangered	G5T1	S1	1B.1
Kenwood Marsh checkerbloom						
Spergularia macrotheca var. longistyla	PDCAR0W062	None	None	G5T2	S2	1B.2
long-styled sand-spurrey						
Streptanthus hesperidis	PDBRA2G510	None	None	G2G3	S2S3	1B.2
green jewelflower						
Syncaris pacifica	ICMAL27010	Endangered	Endangered	G2	S2	
California freshwater shrimp						
Taricha rivularis	AAAAF02020	None	None	G2	S2	SSC
red-bellied newt						
Trachusa gummifera	IIHYM80010	None	None	G1	S1	
San Francisco Bay Area leaf-cutter bee						
Trichostema ruygtii	PDLAM220H0	None	None	G1G2	S1S2	1B.2
Napa bluecurls						
Trifolium amoenum	PDFAB40040	Endangered	None	G1	S1	1B.1
two-fork clover						
Trifolium hydrophilum	PDFAB400R5	None	None	G2	S2	1B.2
saline clover						
Triquetrella californica	NBMUS7S010	None	None	G2	S2	1B.2
coastal triquetrella						
Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Needlegrass Grassland						
Vandykea tuberculata	IICOLX7010	None	None	G1	S2	
serpentine cypress long-horned beetle						
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 80

Search Results

98 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [3812263:3812253:3812264:3812255:3812265:3812243:3812244:3812245:3812254]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Allium peninsulare var. *franciscanum*	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G4G5T2	S2	1B.2	Yes	2001-01-01	© 2019 Aaron Arthur
Alopecurus aequalis var. *sonomensis*	Sonoma alopecurus	Poaceae	perennial herb	May-Jul	FE	None	G5T1	S1	1B.1	Yes	1974-01-01	© 2013 Vernon Smith
Amorpha californica var. *napensis*	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	None	None	G4T2	S2	1B.2	Yes	2001-01-01	© 2016 John Doyen
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	© 2011 Neal Kramer
Antirrhinum virga	twig-like snapdragon	Plantaginaceae	perennial herb	Jun-Jul	None	None	G3?	S3?	4.3	Yes	1974-01-01	© 2013 Aaron Schusteff
Aphyllon validum ssp. *howellii*	Howell's broomrape	Orobanchaceae	perennial herb (parasitic)	Jun-Sep	None	None	G4T3	S3	4.3	Yes	1984-01-01	No Photo Available

Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	Ericaceae	perennial evergreen shrub	(Jan)Mar-May(Jul)	None	None	G5T3	S3	1B.3	Yes	2001-01-01	©2018 Dean Wm. Taylor
Arctostaphylos stanfordiana ssp. *decumbens*	Rincon Ridge manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr(May)	None	None	G3T1	S1	1B.1	Yes	1984-01-01	No Photo Available
Asclepias solanoana	serpentine milkweed	Apocynaceae	perennial herb	May-Jul(Aug)	None	None	G3	S3	4.2	Yes	1974-01-01	© 2009 Julie Kierstead Nelson
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Astragalus clevelandii	Cleveland's milk-vetch	Fabaceae	perennial herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Astragalus rattanii var. *jepsonianus*	Jepson's milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2	Yes	1988-01-01	No Photo Available
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G3?	S3?	1B.2	Yes	2001-01-01	© 2018 Zoya Akulova
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Calochortus uniflorus	pink star-tulip	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4	S4	4.2		2010-03-04	© 2021 Scot Loring
Calyptridium quadripetalum	four-petaled pussypaws	Montiaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4T3	S3	4.2	Yes	1984-01-01	No Photo Available

Castilleja ambigua var. *ambigua*	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G4T4	S3S4	4.2		2009-02-04	©2011 Dylan Neubauer
Castilleja ambigua var. *meadii*	Mead's owls-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-May	None	None	G4T1	S1	1B.1	Yes	2013-01-03	No Photo Available
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Ceanothus gloriosus var. *exaltatus*	glory brush	Rhamnaceae	perennial evergreen shrub	Mar-Jun(Aug)	None	None	G4T4	S4	4.3	Yes	2001-01-01	©2018 John Doyen
Ceanothus pinetorum	Kern ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	None	None	G3	S3	4.3	Yes	1974-01-01	©2017 Aaron Schusteff
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2012 Jake Ruygt
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	Yes	2004-01-01	No Photo Available
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	Onagraceae	annual herb	Apr-Jul	None	None	G5T3	S3	4.2	Yes	2001-01-01	No Photo Available
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	©2019 Zoya Akulova
Cordylanthus tenuis ssp. *brunneus*	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jul-Aug	None	None	G4G5T3	S3	4.3	Yes	1988-01-01	No Photo Available

Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G3	S3	1B.2	Yes	1994-01-01	©2019 Terry Gosliner
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G4	S3	4.2		2018-06-26	No Photo Available
Delphinium uliginosum	swamp larkspur	Ranunculaceae	perennial herb	May-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	© 2013 Aaron Arthur
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	3	Yes	1994-01-01	©2015 Doug Wirtz
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	perennial herb	May-Sep	None	None	G3	S3	1B.2	Yes	1994-01-01	No Photo Available
Eriogonum umbellatum var. *bahiiforme*	bay buckwheat	Polygonaceae	perennial herb	Jul-Sep	None	None	G5T3	S3	4.2	Yes	2001-01-01	No Photo Available
Eryngium constancei	Loch Lomond button-celery	Apiaceae	annual/perennial herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2	Yes	2016-09-13	No Photo Available
Erythranthe nudata	bare monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	John Doyen 2015
Erythronium helenae	St. Helena fawn lily	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2	Yes	1974-01-01	© 2015 Steve Matson

Fritillaria purdyi	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G4	S4	4.3		1974-01-01	Aaron Schusteff, 2004
Harmonia hallii	Hall's harmonia	Asteraceae	annual herb	(Mar)Apr-Jun	None	None	G2?	S2?	1B.2	Yes	1984-01-01	© 2015 John Doyen
Harmonia nutans	nodding harmonia	Asteraceae	annual herb	Mar-May	None	None	G3	S3	4.3	Yes	1984-01-01	© 2008 Neal Kramer
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	(Apr)May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2016 John Doyen
Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	annual herb	May-Jul	None	None	G2Q	S2	1B.2	Yes	2012-12-14	© 2017 Aaron Arthur
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2		2004-01-01	© 2015 John Doyen
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2	Yes	2006-10-12	© 2014 Aaron Schusteff
Juncus luciensis	Santa Lucia dwarf rush	Juncaceae	annual herb	Apr-Jul	None	None	G3	S3	1B.2	Yes	2009-04-30	© 2009 Keir Morse
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	© 2015 Neal Kramer
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1994-01-01	© 2013 Jake Ruygt

Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2	Yes	1994-01-01	© 2007 Len Blumin
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	None	None	G2G3	S2S3	1B.2	Yes	2001-01-01	© 2012 Aaron Arthur
Leptosiphon latisectus	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	Yes	2001-01-01	© 2015 Steve Matson
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	© 2015 Aaron Schusteff
Lilium bolanderi	Bolander's lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	None	None	G4	S3S4	4.2		1974-01-01	© 2008 Keir Morse
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	(Mar)Apr-Aug(Sep)	None	None	G3	S3	4.2	Yes	1974-01-01	Gerald and Buff Corsi © 2022 California Academy of Sciences
Limnanthes floccosa ssp. *floccosa*	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2		1980-01-01	© 2021 Scot Loring
Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	annual herb	Apr-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	© 2015 Vernon Smith
Lomatium hooveri	Hoover's lomatium	Apiaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3	Yes	1980-01-01	No Photo Available
Lomatium repostum	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available

Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1974-01-01	No Photo Available
Malacothamnus helleri	Heller's bush-mallow	Malvaceae	perennial deciduous shrub	May-Jul	None	None	G2Q	S2	3.3	Yes	1974-01-01	© 2017 Keir Morse
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	None	None	G3G4	S3S4	3.2	Yes	1974-01-01	© 2008 Aaron Arthur
Monardella viridis	green monardella	Lamiaceae	perennial rhizomatous herb	Jun-Sep	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Navarretia cotulifolia	cotula navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.2	Yes	2001-01-01	© 2020 Zoya Akulova
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3		1974-01-01	©2021 Scot Loring
Navarretia jepsonii	Jepson's navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	© 2011 Vernon Smith
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	Yes	1994-01-01	© 2018 Barry Rice
Navarretia leucocephala ssp. *pauciflora*	few-flowered navarretia	Polemoniaceae	annual herb	May-Jun	FE	CT	G4T1	S1	1B.1	Yes	1974-01-01	© 2013 Jake Ruygt
Navarretia myersii ssp. *deminuta*	small pincushion navarretia	Polemoniaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	2001-01-01	No Photo Available
Navarretia paradoxinota	Porter's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	None	None	G2	S2	1B.3	Yes	2016-04-27	No Photo Available
Navarretia rosulata	Marin County navarretia	Polemoniaceae	annual herb	May-Jul	None	None	G2	S2	1B.2	Yes	1980-01-01	No Photo Available

Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	Plantaginaceae	perennial herb	Apr-Aug	None	None	G4T3	S3	1B.3	Yes	1988-01-01	Jason Matthias Mills 2020
Plagiobothrys strictus	Calistoga popcornflower	Boraginaceae	annual herb	Mar-Jun	FE	CT	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Poa napensis	Napa blue grass	Poaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2		2015-10-15	No Photo Available
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2		1974-01-01	No Photo Available
Ribes victoris	Victor's gooseberry	Grossulariaceae	perennial deciduous shrub	Mar-Apr	None	None	G3G4	S3S4	4.3	Yes	1974-01-01	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	©2013 Debra L. Cook
Sidalcea hickmanii ssp. *napensis*	Napa checkerbloom	Malvaceae	perennial herb	Apr-Jun	None	None	G3T1	S1	1B.1	Yes	2009-04-02	No Photo Available
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Sidalcea oregana ssp. *hydrophila*	marsh checkerbloom	Malvaceae	perennial herb	(Jun)Jul-Aug	None	None	G5T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Sidalcea oregana ssp. *valida*	Kenwood Marsh checkerbloom	Malvaceae	perennial rhizomatous herb	Jun-Sep	FE	CE	G5T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2	Yes	2017-06-16	No Photo Available
Streptanthus brachiatus ssp. *brachiatus*	Socrates Mine jewelflower	Brassicaceae	perennial herb	May-Jun	None	None	G2T1	S1	1B.2	Yes	1980-01-01	No Photo Available
Streptanthus hesperidis	green jewelflower	Brassicaceae	annual herb	May-Jul	None	None	G2G3	S2S3	1B.2	Yes	2001-01-01	No Photo Available
Streptanthus morrisonii ssp. *elatus*	Three Peaks jewelflower	Brassicaceae	perennial herb	Jun-Sep	None	None	G2T1	S1	1B.2	Yes	1974-01-01	No Photo Available

Streptanthus vernalis	early jewelflower	Brassicaceae	annual herb	Mar-May	None	None	G1	S1	1B.2	Yes	2009-02-04	No Photo Available
Toxicoscordion fontanum	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3	S3	4.2	Yes	2001-01-01	No Photo Available
Trichostema ruygtii	Napa bluecurls	Lamiaceae	annual herb	Jun-Oct	None	None	G1G2	S1S2	1B.2	Yes	2007-01-03	No Photo Available
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	© 2005 Dean Wm Taylor
Triteleia lugens	dark-mouthed triteleia	Themidaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4?	S4?	4.3	Yes	1974-01-01	No Photo Available
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3		1974-01-01	© 2006 Tom Engstrom

Showing 1 to 98 of 98 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 9 July 2023].

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2023-0115172
Project Name: Inn at the Abbey

August 10, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2023-0115172
Project Name: Inn at the Abbey
Project Type: Commercial Development
Project Description: The Project Applicant is proposing a Major Use Permit Modification to accommodate development of a boutique hotel within the existing Freemark Abbey Winery complex. The Inn at the Abbey Project would construct a 79-room hotel that would be split between the North Parcel (50 rooms) and the South Parcel (29 rooms). The Project would demolish three existing structures totaling approximately 10,050 square feet. These buildings are currently used as a restaurant, retail wine shop, art gallery, and five-room motel. Demolition activities would also include removal of asphalt concrete driveways and surface parking areas, as well as concrete slabs.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.52400405,-122.4955640491439,14z

Counties: Napa County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1123

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Calistoga Allocarya *Plagiobothrys strictus*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/6161	
Clara Hunt's Milk-vetch *Astragalus clarianus*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/3300	
Napa Bluegrass *Poa napensis*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/2266	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Sharon Dulava
Address: 787 The Alameda Suite 250
City: San Jose
State: CA
Zip: 95126
Email sharon.dulava@gmail.com
Phone: 5104636764

Appendix C
Wildlife Observed in the Study Area

TABLE D
WILDLIFE SPECIES OBSERVED IN THE STUDY AREA

Common Name	Scientific Name
Mammals	
California ground squirrel	*Otospermophilus beecheyi*
Insects	
Yellow-faced bumble bee	*Bombus vosnesenskii*
Birds	
Turkey vulture	*Cathartes aura*
Northern mockingbird	*Mimus polyglottos*
American crow	*Corvus brachyrhynchos*
California scrub-jay	*Aphelocoma californica*
Pileated woodpecker	*Dryocopus pileatus*

This page intentionally left blank

Appendix D
Regionally Occurring Special-Status Species

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Plants				
Allium peninsulare var. *franciscanum*	Franciscan Onion	--/--/1B.2	Found in serpentine soils in valley grasslands and foothill woodlands up to 1100m in elevation.	**None:** No suitable serpentine soil in the study area.
Alopecurus aequalis var. *sonomensis*	Sonoma alopecurus	FE/--/1B.1	Found in wetlands and riparian habitats.	**None.** No suitable habitat in the study area.
Amorpha californica var. *napensis*	Napa false indigo	--/--/1B.2	Openings in broad-leafed forest, chaparral, cismontane woodland.	**Moderate:** Nearest occurrence record approximately 0.5 mile west of the study area. Not observed during July 2023 site visit, but oak woodland portion of site provides potentially suitable habitat.
Anomobryum julaceum	Bent-flowered fiddleneck	--/--/1B.2	Found in coastal woods and inland mountains.	**None:** No suitable habitat in the study area.
Anomobryum julaceum	Slender silver moss	--/--/4.2	Found in wet crevices and on sandstone cliffs in temperate regions.	**None:** No suitable habitat in the study area.
Arctostaphylos stanfordiana ssp. *decumben*	Rincon Ridge manzanita	--/--/1B.1	Found between grasslands and oak woodlands in sandy or clay soils.	**Low**. The study area provides minimal suitable habitat. Not observed during July 2023 site visit.
Astragalus claranus	Clara Hunt's milk-vetch	FE/SE/1B.1	Found in grasslands and in openings of blue oak/manzanita woodland on volcanic or serpentine substrates.	**None:** No suitable serpentine or volcanic soil in the Study area. Volcanic bedrock occurs west of the study area.
Brodiaea leptandra	Narrow-anthered brodiaea	--/--/1B.2	Openings in broad-leafed forest, chaparral, lower montane coniferous forest.	**Moderate:** Nearest occurrence record approximately 0.5 mile west of the study area. Not observed during July 2023 site visit, but oak woodland portion of site provides potentially suitable habitat.
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning-glory	--/--/4.2	Found on slopes in woodlands, often on serpentine soils.	**Low**. The study area provides minimal suitable habitat.
Ceanothus confuses	Rincon Ridge ceanothus	--/--/1B.1	Found in coastal mountains with coniferous forests and woodlands.	**None:** No suitable habitat in the study area.
Ceanothus divergens	Calistoga ceanothus	--/--/1B.2	Shrub-covered, rocky, volcanic slopes.	**Low:** No suitable volcanic soil in the study area. Volcanic bedrock occurs west of the study area.
Ceanothus purpureus	Holly-leaved ceanothus	--/--/1B.2	Chaparral, rocky volcanic slopes.	**None:** No suitable volcanic soil in the study area. Volcanic bedrock occurs west of the study area.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Ceanothus sonomoensis	Sonoma ceanothus	--/--/1B.2	Found in chaparral woodlands.	**None:** No suitable habitat in the study area.
Centromadia parryi ssp. *parryi*	Pappose tarplant	--/--/1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland.	**None:** No suitable habitat in the study area.
Erigeron greennei	Greene's narrow-leaved daisy	--/--/1B.2	Found in serpentine soils on dry slopes among chaparral	**None:** No suitable serpentine soil in the study area. One historical occurrence within 5 miles, south of the study area in approximate location.
Eryngium constancei	Loch Lomond button-celery	--/--/1B.1	Found in vernal pools	**None:** No suitable vernal pool habitat in the study area.
Eryngium jepsonii	Jepson's coyote-thistle	--/--/1B.2	Perennial herb that grows in valley and foothill grasslands and vernal pools. Blooms from April to August.	**None:** No suitable habitat in the study area.
Fritillaria liliacea	Fragrant fritillary	--/--/1B.2	Found in loamy clay soils of open grassland; rocky soils; coastal scrub. Often associated with vernal pools and mima mounds.	**None:** No suitable soil habitat in the study area.
Harmonia hallii	Hall's harmonia	--/--/1B.2	Found in chapparal on serpentine soils.	**None:** No suitable serpentine soil in the study area.
Hesperolinon bicarpellatum	Two-carpellate western flax	--/--/1B.2	Found in rocky slopes in chaparral and serpentine soils.	**None:** No suitable habitat in the study area.
Hesperolinon sharsmithiae	Sharsmith's western flax	--/--/1B.2	Found in serpentinite soils in open chaparral habitat.	**None:** No suitable serpentine soil in the study area.
Juncus luciensis	Santa Lucia dwarf rush	--/--/1B.2	Found in vernal pools, streambanks and meadows.	**None:** No suitable habitat in the study area.
Lasthenia burkei	Burke's goldfields	FE/SE/1B.1	Found in wetlands and vernal pools.	**None:** No suitable vernal pool habitat in the study area.
Layia septentrionalis	Colusa layia	--/--/1B.2	Annual herb found in chaparral, cismontane woodland, and valley and foothill grassland, which is occasionally on sandy, serpentine substrate, from 328 to 3,592 feet (100 to 1,095 meters). Blooms April through May.	**Moderate**. The oak woodland provides potentially suitable habitat for this species.
Leptosiphon jepsonii	Jepson's leptosiphon	--/--/1B.2	Openings in chaparral, cismontane woodland (usually volcanic or periphery of serpentinite).	**None:** No suitable soil habitat in the study area.
Limnanthes floccosa ssp. *floccosa*	Wooly meadowfoam	--/--/4.2	Found on outer edges of vernal pools	**None:** No suitable vernal pool habitat in the study area.
Limnanthes vinculans	Sebastopol meadowfoam	FE/SE/1B.1	Found in wet meadows and near vernal pools.	**None:** No suitable vernal pool habitat in the study area.
Lupinus sericatus	Cobb Mountain lupine	--/--/1B.2	Found in the woodlands and chaparral of slopes and canyons.	**None:** No suitable habitat in the study area.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	--/--/1B.1	Annual herb found in mesic areas of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 16 to 5,709 feet (5 to 1,740 meters). Blooms April through July.	**Low**. The oak woodland within the study area provides potentially suitable habitat for this species. Nearest record is approximately 10 miles north of the study area (Occurrence No. 14). Specimen recorded in 1903 in vernal pool. The record is noted as extirpated.
Navarretia rosulata	Marin County navarretia	--/--/1B.2	Found in rocky serpentine soils in chaparral and pine forests.	**None:** No suitable soil habitat in the study area.
Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	--/--/1B.2	Found in rocky habitats at high elevation.	**None:** No suitable habitat in the study area.
Plagiobothrys strictus	Calistoga popcornflower	FE/ST/1B.1	Found in grasslands around pools and hot springs in clay soils.	**Low:** Occurrence records located west of the study area. study area disturbed and does not provide suitable habitat for this species.
Poa napensis	Napa blue grass	FE/SE/1B.1	Found in grasslands around pools and hot springs in clay soils.	**None:** No suitable habitat in the study area.
Puccinellia simplex	California alkali grass	--/--/1B.2	Annual herb that grows in chenopod scrub, meadows and seeps, valley and foothill grassland and vernal pools. Blooms from March to May.	**None:** No suitable habitat in the study area.
Sidalcea hickmanii ssp. *napensis*	Napa checkerbloom	--/--/1B.1	Chamise chaparral in rhyolitic volcanic soil.	**None:** No suitable volcanic soil in the study area.
Sidalcea oregana ssp. *hydrophila*	Marsh checkerbloom	--/--/1B.2	Found in wet meadows and on stream banks in forests.	**None:** No suitable habitat in the study area.
Sidalcea oregana ssp. *valida*	Kenwood Marsh checkerbloom	FE/SE/1B.1	Found in freshwater marshes	**None:** No suitable marsh habitat in the study area.
Spergularia macrotheca var. *longistyla*	Long-styled sand-spurrey	--/--/1B.2	Found in coastal or inland habitats on alkaline and saline substrates.	**None:** No suitable soil habitat in the study area.
Streptanthis hesperidis	Green jewelflower	--/--/1B.2	Found in chaparral and oak woodlands at low elevations (250-600m).	**Low.** The oak woodland within the study area provides minimal habitat for this species.
Trichostema ruygtii	Napa bluecurls	--/--/1B.2	Annual herb found in chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools from 98 to 2,231 feet (30 to 680 meters). Blooms June through October.	**Moderate.** The oak woodland within the study area provides potentially suitable habitat for this species.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Trifolium amoenum	Two-fork clover	FE/--/1B.1	Found in grasslands with heavy soils.	**Low:** No suitable habitat in the study area. Records within 10 miles occur in higher elevation areas to the west of the project site and are historical.
Trifolium hydrophilum	Saline clover	--/--/1B.2	Valley and foothill grassland, marshes and swamps, vernal pools.	**None:** No suitable habitat in the study area.
Viburnum ellipticum	Oval-leaved viburnum	--/--/2B.3	Openings in chaparral, cismontane woodland, lower montane coniferous forest.	**None:** No suitable habitat in the study area.
Fish				
Oncorhynchus kisutch pop. 4	Coho salmon – Central California coast ESU	FE/SE/--	Found in rivers and drainages across central California coast.	**None.** The study area does not provide suitable aquatic habitat.
Oncorhynchus mykiss irideus pop. 8	Steelhead – Central California coast DPS	FT/ST/--	Drainages of San Francisco and San Pablo bays, central Calif. Coastal rivers.	**None.** The study area does not provide suitable aquatic habitat.
Invertebrates				
Bombus occidentalis	Western bumble bee	--/SC/--	Nests, forages, and overwinters in meadows and grasslands with abundant floral resources and available underground nesting habitat in fossorial animal burrows. Range is throughout California, but more common in the Sierra Nevada and Coast Ranges than in the Central Valley.	**Low.** The developed habitat within the study area provides minimal habitat for this species.
Danaus plexipus	Monarch butterfly	FC/--/--	Found in closed-cone coniferous forest. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Low.** No suitable habitat for roosting in the study area. Study area is along migration route.
Syncaris pacifica	California freshwater shrimp	FE/SE/--	Inhabits small, perennial coastal streams with low gradients. Found in tributary streams in the lower Russian River drainage that drain to the Pacific Ocean, coastal streams that drain to the Pacific Ocean, streams that drain to Tomales Bay, and streams that drain to San Pablo Bay.	**None.** The study area does not provide suitable aquatic habitat.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Amphibians				
Dicamptodon ensatus	California giant salamander	--/CSC/--	Occurs in wet coastal forests in clear, cold permanent and semi-permanent streams and seepages. Occurs from 0 to 3,002 feet (0 to 915 meters). The range of this species occurs from the coastline above San Francisco Bay inland to Clear Lake.	**Low**. Oak woodlands provide minimal upland cover habitat for this species, but it is most likely absent from the site.
Rana boylii	Foothill yellow-legged frog	--/CSC/--	Inhabits partially-shaded, shallow perennial and intermittent streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Rarely encountered far from permanent water sources.	**None**. The project site does not provide habitat for this species. Opportunities for dispersal into study area from permanent water sources restricted by roads and development.
Rana draytonii	California red-legged frog	FT/CSC/--	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 4,921 feet (0 to 1,500 meters).	**None**. The project site does not provide habitat for this species. Opportunities for dispersal into study area from permanent water sources restricted by roads and development.
Reptiles				
Actinemys marmorata	Western pond turtle	--/CSC/--	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet (1,829 feet). Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers from water for egg-laying.	**Low.** The project site does not provide habitat for this species. Opportunities for dispersal into study area from permanent water sources restricted by roads and development.
Birds				
Accipiter striatus	Sharp-shinned hawk	--/--/--	Found in dense conifer forests with closed canopy.	**Low** Trees within the study area provide potential nesting habitat. However, most records for this species occur in higher elevation areas to the west of the site
Agelaius tricolor	Tri-colored blackbird	--/ST/--	Nests in tall freshwater emergent marsh or weedy vegetation, brambles. Requires large foraging areas.	**Low**. The agriculture habitat within the study area may provide minimal foraging habitat. No nesting habitat within study area.
Ardea alba	Great egret	--/--/--	Found in freshwater, brackish, and marine wetlands	**None.** The study area does not provide suitable habitat.
Ardea Herodias	Great blue heron	--/--/--	West coast of California; Salton Sea and Colorado River area.	**None.** The study area does not provide suitable habitat.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Buteo swainsoni	Swainson's hawk	--/ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations. Northern habitat summer range in California begins in central Tehama south to Kern County. Predominant breeding habitat is located in the Central Valley.	**Low**. The trees within the study area provide marginally suitable nesting habitat. Preferred nesting habitat is available approximately 0.25 mile to the east along the Napa River. There are no CNDDB records within 10 miles of the Study area. A research grade iNaturalist record of a nest in Napa County is located over 15 miles south of the Study area. The study area is mostly developed and agricultural areas provide marginally suitable foraging habitat.
Cypsedloides niger	Black swift	--/--/--	Found on cliff ledges behind or near waterfalls and sea caves. Forage over forests.	**Low.** The study area may provide minimal forging habitat.
Elanus leucurus	White-tailed kite	--/FP/--	Found throughout California in a range of habitats including marshes, grassland, and oak woodlands, and commonly perches on top of treetops, wires, and fence posts. Typically nests in the upper third of trees that can be anywhere from 10 feet to 160 feet tall, generally in open country and growing in isolation.	**Moderate.** Study area provides suitable nesting and foraging habitat.
Falco mexicanus	Prairie falcon	--/--/--	Found on cliffs or bluffs in grasslands, shrubsteppe desert, and areas of mixed shrubs and grasslands. Forage over agricultural fields.	**Low.** May forage in the vicinity but study area does not provide suitable nesting habitat.
Falco peregrinus anatum	American peregrine falcon	FD/SD/--	Nests in cliffs or skyscrapers near coastlines, mudflats and mountain chains.	**Low.** May forage in the vicinity but study area does not provide suitable nesting habitat. A research-grade iNaturalist record of an injured peregrine was recorded in 2019, approximately 4 miles north of the Study area in Calistoga.
Haliaeetus leucocephalus	Bald eagle	FD/SE/--	Nests in forested areas adjacent to large bodies of water, away from areas of human development.	**Low.** The study area does not provide suitable habitat for nesting or foraging.

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Listing Status: Federal/ State/Other	Habitat Description	Potential for Occurrence within the Study area
Progne subis	Purple martin	--/CSC/--	Inhabits woodlands and low elevation coniferous forest of Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and Monterey pine (*Pinus radiata*). Nests primarily in old woodpecker cavities, also in human-made structures. Nest often located in tall, isolated tree/ snag.	**Moderate**. The study area provides potentially suitable nesting habitat for this species. Woodpeckers were observed in Study area.
Mammals				
Antrozous pallidus	Pallid bat	--/CSC/High	Inhabits oak woodland, savannah, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	**Moderate**. The developed areas associated with the restaurant building may provide suitable roosting habitat.
Corynorhinus townsendii	Townsend's big-eared bat	--/CSC/High	Throughout California in a wide variety of habitats. Most common in mesic sites. Maternity roosts are found in caves, tunnels, mines, or other human-made structures. May use separate sites for night, day, hibernation, or maternity roosts.	**Moderate**. The developed areas associated with the restaurant building may provide suitable roosting habitat.
Myotis evotis	Long-eared myotis	--/--/Medium	Inhabits semiarid shrublands and shortgrass prairie. Roosts in crevices and hollows in trees, rocks, caves, and buildings.	**Low**. The study area provides minimal roosting habitat.

KEY:

Federal: (USFWS)

FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government

Western Bat Working Group:
High = Highest priority for funding, planning, and conservation actions

State: (CDFW)

SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SC = Candidate for listing by the State of California
CSC = California Species of Special Concern
FP = CDFW Fully Protected Species

California Rare Plant Rank (CRPR):

Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
Rank 2B = Plants rare, threatened, or endangered in California but more common elsewhere
Rank 4.2 = Plants of limited distribution; fairly threatened in California

Appendix E

Historic Resource Evaluation Memorandum

ESA

180 Grand Avenue
Suite 1050
Oakland, CA 94612
510.839.5066 phone
510.839.5825 fax

esassoc.com

memorandum

date August 22, 2023

to Trevor Hawkes, Supervising Planner
Napa County Planning, Building, and Environmental Services Department

cc Jill Feyk-Miney, ESA

from Johanna Kahn, ESA

subject Inn at the Abbey Project Historic Resource Evaluation Memo – DRAFT

Jackson Family Investments III, LLC is proposing a Major Use Permit Modification to accommodate development of a boutique hotel within the existing Freemark Abbey Winery complex in St. Helena, California. The Inn at the Abbey Project (project) would demolish three buildings that currently meet (in 2023) the 45-year age threshold for consideration as potential historical resources for the purposes of the California Environmental Quality Act (CEQA) (i.e., those constructed in and before 1978). Interior alterations are proposed for one additional building meeting this age threshold. This memo presents architectural descriptions, a historic context, and evaluations of these four buildings for eligibility for listing on the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register). No buildings within the project area are currently designated as Napa County Landmarks.[1]

Methodology

ESA architectural historians completed a survey of the project area on July 20, 2023. Research conducted for this report includes:

- Records search at the Northwest Information Center;
- Historical aerial photographs available online;
- Sanborn Fire Insurance Co. maps (Sanborn maps) available online;
- Historical newspapers and periodicals available online;
- Building permit records provided by the Napa County Planning, Building, and Environmental Services Department;
- In-person research at the Napa County Historical Society and Napa County Landmarks;
- Correspondence with Stacey De Shazo, an architectural historian who previously prepared historical documentation for the Freemark Abbey Winery; and

[1] Policy CC-18 of the 2008 Napa County General Plan defines "significant historical resources" as "buildings, structures, districts, and cultural landscapes that are *designated* Napa County Landmarks or listed in or eligible for listing in either the National Register of Historic Places or the California Register of [Historical] Resources." (Italics added for emphasis.)

- Other online research (e.g., *Internet Archive*, company websites, digital archives and finding aids, etc.)

ESA senior architectural historian Johanna Kahn, M.Ar.H., is the author of this report. ESA senior architectural historian Becky Urbano, M.S., provided quality assurance and review. Ms. Kahn and Ms. Urbano both meet the Secretary of the Interior's Professional Qualifications Standards for architectural history. Research assistance was provided by ESA cultural resource specialist Amy Langford, Ph.D.

Project Area

The project is located on a 15-acre site at Lodi Lane along State Route (SR) 29 (also known as St. Helena Highway North), approximately 0.5 mile north of the city limits of St. Helena, in unincorporated Napa County (**Figure 1**). The project area comprises six parcels that are grouped in two sections separated by Lodi Lane. Within the north section (i.e., north of Lodi Lane) are Assessor Parcel Numbers (APNs) 022-130-027, 022-120-028, 022-130-023, and 022-130-024. Within the south section (i.e., south of Lodi Lane) are APNs 022-220-028 and 022-220-029. Located within this combined project area are four buildings that currently meet the age threshold for consideration as potential historic resources under CEQA (i.e., those that are at least 45 years old in 2023) that would be altered or demolished under the proposed project. These buildings are:

- 3022 SR 29 (APN 022-130-027) – A stone building that is part of the Freemark Abbey Winery (P-28-001848);
- 3010 SR 29 (APN 022-130-028) – A restaurant building that is currently vacant;
- 3000 SR 29 (APN 022-220-028; P-28-002464) – A commercial building that is currently vacant; and
- 1189 Lodi Lane (APN 022-220-028) – A five-room motel located across the street from the main Freemark Abbey Winery complex.

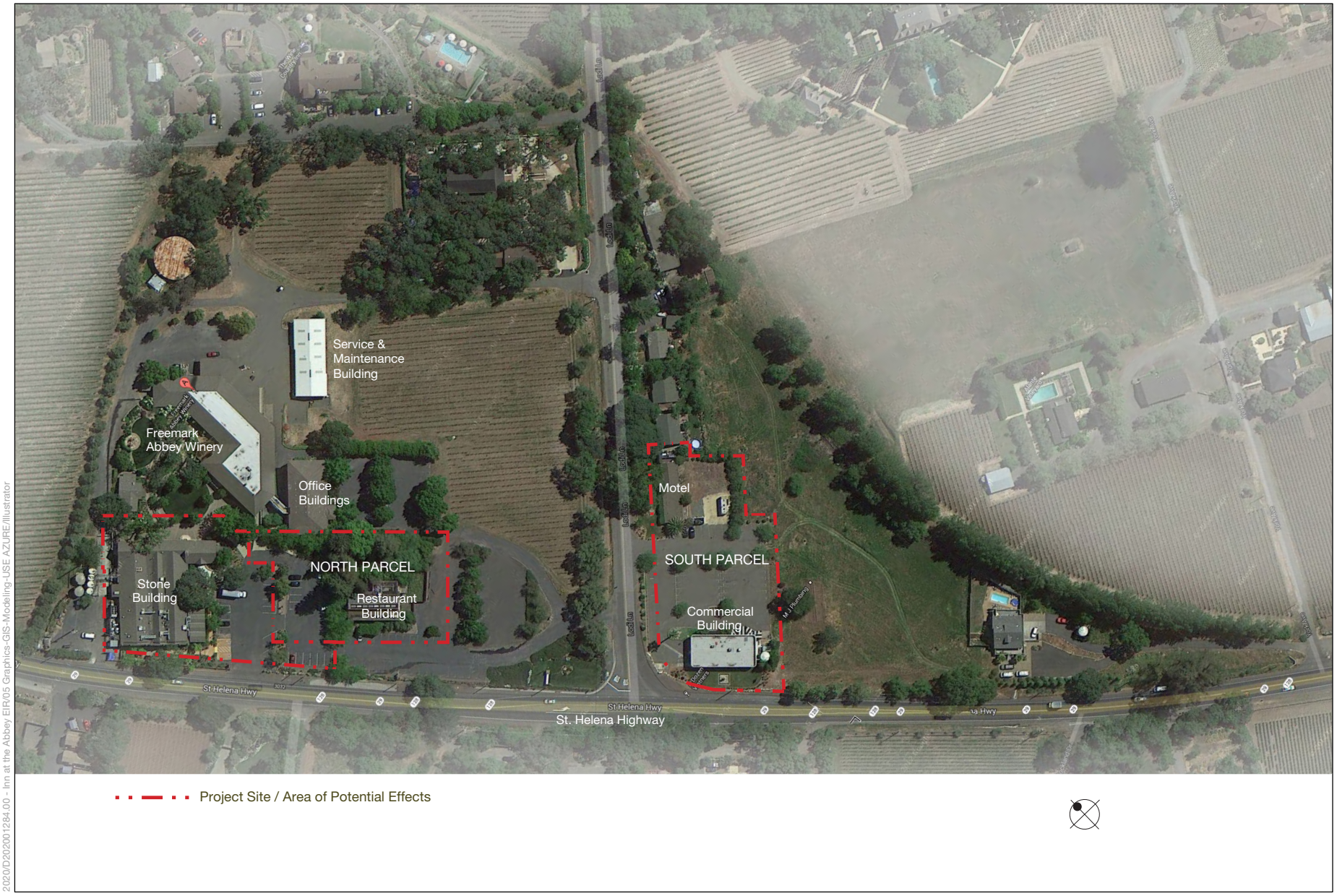
Building Descriptions

Stone Winery Building (3022 SR 29)

Exterior

The stone building is the oldest building located on the Freemark Abbey Winery property. The one- and two-story building features an L-shaped footprint. It occupies a partially excavated site and appears to be one story above grade when viewed from the south and west, and it appears to be two stories above grade when viewed from the north and east. The exterior walls are of stone masonry construction (both ashlar and rough-hewn units in different locations), and the steel-frame roof combines gabled, shed, and bowstring truss forms covered variously in asphalt and bituminous roofing.

The primary (southwest) façade faces SR 29 and is set back from the road behind a stone wall/fence and a private, landscaped patio (**Figure 2**). The façade is constructed of ashlar masonry and features three large, arched openings that are unequally spaced apart; two of the openings include wood-frame door and fixed window assemblies, and one opening includes a fixed window assembly only. The large openings are flanked by smaller arched openings with fixed, wood-sash windows. Above the arched openings are two bronze plaques that read "A. Forni 1895" and "A. Forni 1906." The façade terminates in an elaborate stepped parapet that features crenellations, stone scrollwork, and a large stone plaque at the highest point that reads "Lombarda Cellar."



2020/D202001284.00 - Inn at the Abbey EIR/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: RSA, 2019

Historic Resource Evaluation for the Inn at the Abbey Project

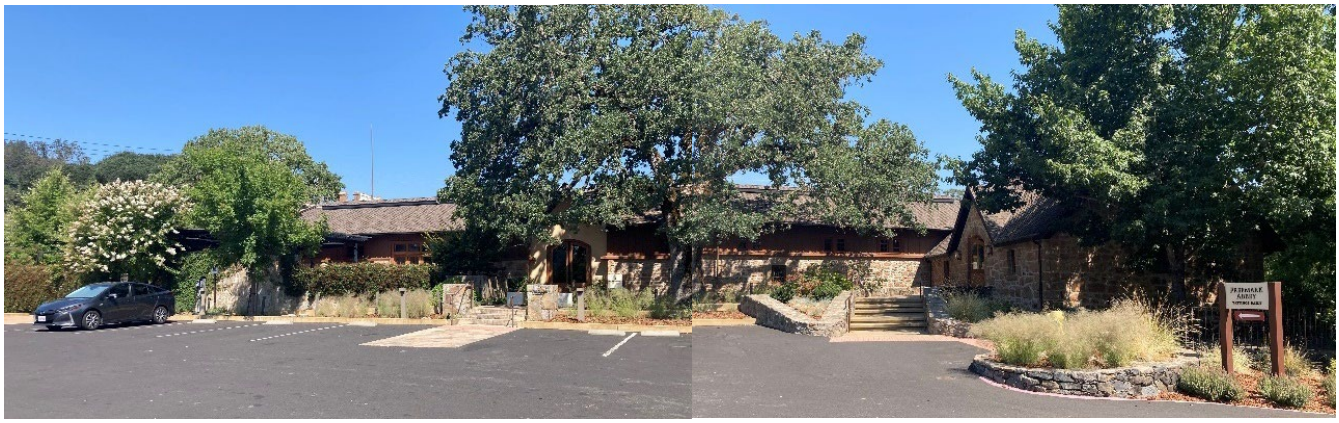
Figure 1
Area of Potential Effects

ESA

SOURCE: ESA 2023

Figure 2
Stone winery building, primary (southwest) façade, view facing north

The secondary (southeast) façade faces a paved parking lot (**Figure 3**). The wall is composed of rough-cut stone at the base and wood board-and-batten siding above. The lower stone wall features rectangular window openings framed by ashlar masonry that are filled with wood-sash, casement windows. The upper wood-frame wall features pairs of fixed, wood-sash, clerestory windows. The main entrance on the secondary façade is a pair of arched, partially glazed, wood-frame doors located below a small gable. A secondary entrance provides access to an outdoor dining area and is composed of a pair of glazed, wood-frame doors (one of which is a folding door) with fixed transoms above. The façade terminates in an eave of one of the shed roof forms that is punctuated by a small gable near the center of the façade.



SOURCE: ESA 2023

Figure 3
Stone winery building, secondary (southeast) façade, view facing northwest

The rear (northeast) façade faces a large, landscaped area used for outdoor events (**Figure 4**). The two-story façade is composed entirely of rough-cut stone. The first floor features a wall-mounted, stone fountain and three large, arched openings fitted with hybrid rolling/hinged wood doors, and they are flanked by wood-sash, casement windows within rectangular openings. An identical window pattern occurs on the second floor. Above the central arched opening is a bronze plaque that reads "Freemark Abbey." The façade terminates in the eave of a gabled roof form.

The side (northwest) façade faces a service driveway from SR 29 (Figure 4). With the exception of a small, wood-frame addition at the west end, the façade is composed entirely of ashlar stone masonry. Rectangular window openings with wood-sash, casement windows are located on the first and second floors and below a gable, and a partially glazed, wood door is located near the center of the façade. The west end of the façade terminates in an eave of one of the shed roof forms, and the east end terminates in a gable.

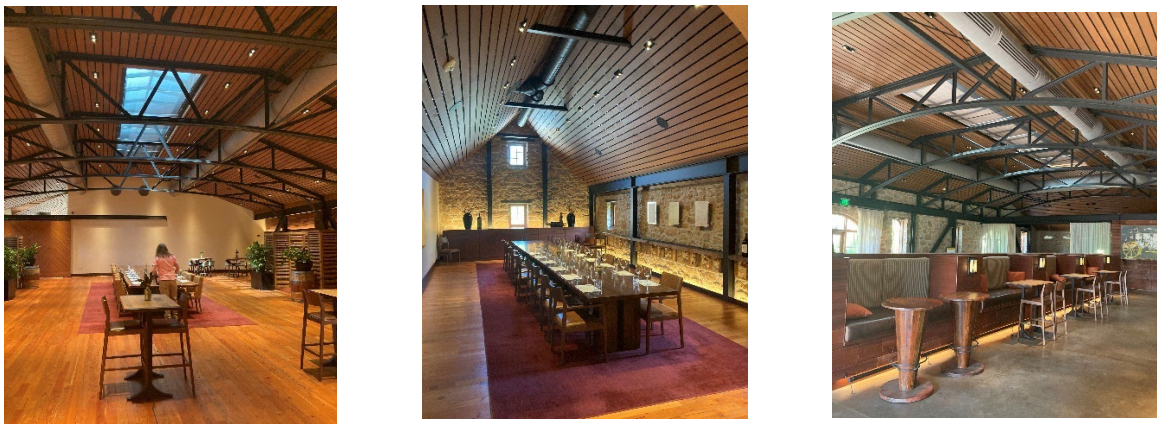
SOURCE: ESA 2023

Figure 4
Stone winery building, rear (northeast) and northwest façades, view facing south

Interior

The upper floor includes spaces for wine tasting (the Tasting Salon, Great Hall, and Josephine Room) and a restaurant (currently used as an event space) (**Figure 5**). The spaces are characterized by stone and/or wood walls with exposed steel framing, high ceilings with exposed steel trusses and ducts, and wood or tile floors.

The lower floor includes additional spaces for wine tasting (the Library Room, Collectors Lounge, and Welcome Area Sampling Room) that are characterized by stone walls, wood ceilings, timber beams, steel posts, and concrete floors.

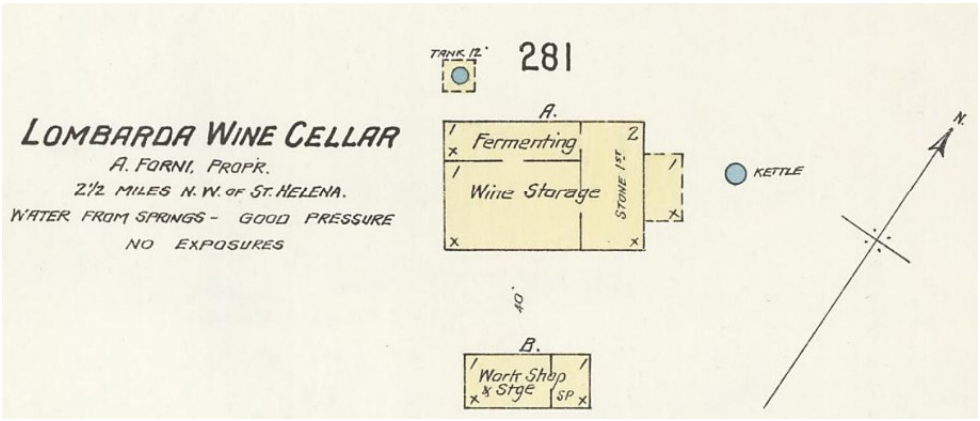


SOURCE: ESA 2023

Figure 5
Great Hall (left), Josephine Room (center), and Restaurant (right)

Construction Chronology and Alterations

Construction of the first winery in this location (Tychson Cellar) occurred in summer 1886. It was a redwood-frame building that measured 50' x 50' and included a cellar with an estimated capacity of between 20,000 and 30,000 gallons of wine.[2] Under a subsequent owner, a multi-level stone building that measured 90' x 175' and had a capacity of 350,000 gallons of wine was constructed in 1899 and replaced the redwood building (**Figure 6** and **Figure 7**). Over the next decade, the stone building (known at that time as Lombarda Cellar) was enlarged three times (**Figure 8** through **Figure 10**).[3] The front (west) portion of the stone building was one story in height, had a gravel floor, and was initially used to for manufacturing and fermentation processes. Excavations in the hillside created a two-story rear (east) portion of the building that had cement flooring to support the winery's storage tanks.[4]



SOURCE: Library of Congress

Figure 6
1899 Sanborn Map

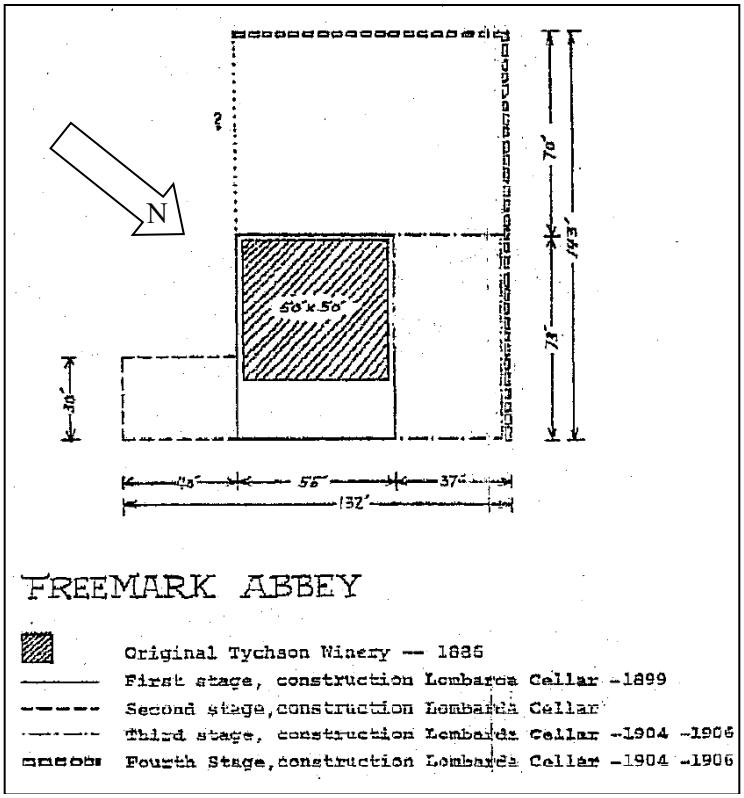
[2] William F. Heintz, *Freemark Abbey Winery of Tychson Hill, St. Helena, California* (Glen Ellen, California: Research of Glen Ellen, 1975), 8; Dolly Prchal, "Josephine Marlin Tychson: The First Woman Winemaker in California," *Gleanings: Napa County Historical Society* 3, no. 4 (December, 1986), 12, on file at the Napa County Historical Society.

[3] William F. Heintz, "Wineries of Uncertain Vintage," *San Francisco Chronicle,* December 3, 1978, 68.

[4] "The Vineyards and Wineries," *The St. Helena Star,* October 19, 1906), 1.

SOURCE: Freemark Abbey website; "The Vineyards and Wineries," *St. Helena Star,* October 19, 1906, 1.

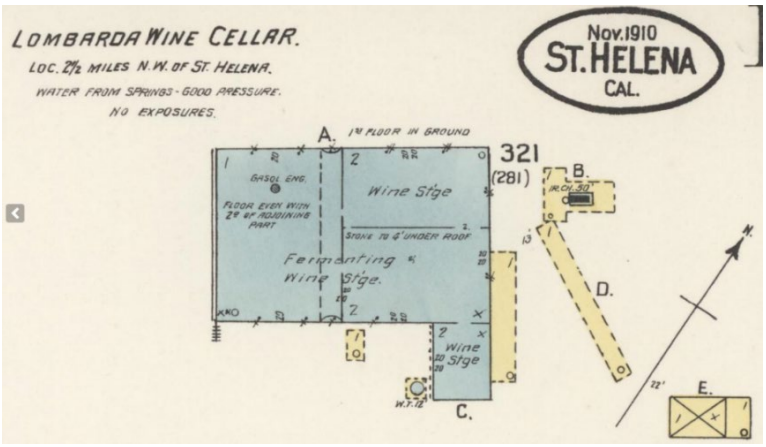
Figure 7
Freemark Abbey, 1906



Note that the wall segment identified by the question mark (?) was constructed before 1910.

SOURCE: Freemark Abbey Winery, 1975

Figure 8
Construction Sequence of the Stone Building



SOURCE: Library of Congress

Figure 9
1910 Sanborn Map

SOURCE: Freemark Abbey

Figure 10
Lombarda Cellar, ca. 1910

In 1940, the winery came under new ownership and was renamed Freemark Abbey. Extensive changes were planned that included a new roof for the stone building, the rearrangement of cooperage, and other improvements. (Archival research did not confirm if these planned alterations were realized.) During the 1960s, contractor John Cavuglieri of Calistoga completed extensive renovations for structural improvements to the stone building and the lower cellars, in which Cavuglieri replaced the drainage, installed a new sewage system, added hot water lines and electricity.[5]

[5] Freemark Abbey Winery, Profile on Charles (Chuck) Carpy, Managing Partner, n.d., on file at the Napa County Historical Society.

Building permit records for the following alterations completed between 1964 and 2016 are on file at the Napa County Planning, Building, and Environmental Services Department.

- An office and toilets were added to the building in 1964.[6]
- In 1972, a 1,500-square-foot outdoor dining terrace was constructed adjacent to the secondary (southeast) façade.[7] An entrance vestibule was constructed in 1975 on the primary (southwest) façade of the stone building that led to a cocktail lounge within.[8]
- In 1976, the interior was reconfigured to include new restrooms.[9]
- In 1976-77, a 1,000-square-foot, wood-frame addition was constructed on the secondary (southeast) façade. Known as the "Cloister Room," it was an extension of the Abbey Restaurant.[10] (This addition is no longer extant.) The stone building was reroofed in 1980.[11] The kitchen was remodeled in 1986.[12]
- In 1995, a handicap ramp was constructed on the secondary (southeast) façade.[13] The following year, the interior walls in a former restaurant space were demolished,[14] and a restaurant remodel was completed.[15] In 2000, alterations were made to the restaurant in the stone building to include a brewery.[16]
- The building was extensively renovated in 2015–16 (**Figure 11**). The roof was removed and replaced with a complex roof structure; the building was structurally reinforced with steel moment frames and open trusses on the interior; the mechanical, electrical, and plumbing systems were upgraded; accessibility upgrades were made to conform with the Americans with Disabilities Act (ADA); the restaurant and winery spaces were thoroughly remodeled; and an exterior dining terrace was constructed. The estimated cost of all work totaled $9.58 million.[17]

SOURCE: Freemark Abbey Facebook page

Figure 11
Freemark Abbey renovation, November 2015

[6] Building permit no. B7012, October 16, 1964.
[7] Building permit no. B15901, March 29, 1972.
[8] Building permit no. B18949, March 18, 1975.
[9] Building permit no. B20236, January 16, 1976.
[10] Building permit no. B20776, May 17, 1976.
[11] Building permit no. B27321, July 24, 1980.
[12] Building permit no. B36811, February 13, 1986.
[13] Building permit no. B56501, November 1, 1995.
[14] Building permit no. B57501, April 22, 1996.
[15] Building permit no. B57407, July 17, 1996.
[16] Building permit no. B-00-00156, May 2, 2000.
[17] Building permit no. B14-00979, June 26, 2014.

Ownership and Occupancy History

Owners

- 1899–1908: Antonio Forni
- 1908–33: Marianna Forni
- 1933–37: Napa Cantina Winery Corporation
- 1937–40: Marianna Forni
- 1940–67: Albert "Abbey" Ahern, Charles Freeman, and Mark Foster
- 1967–2001: Charles Carpy, Laurie Wood, Bradford Webb, Bill Jaeger, John Bryan, Dick Heggie, and Jim Warren
- 2001–05: Legacy Estate Group
- 2006–present: Jackson Family Investments III, LLC

Occupants

- Lombarda Cellar occupied the building from 1899 to 1940 (under several different owners).
- Freemark Abbey Winery occupied the building beginning in 1940.
- The Hurd Candle Factory was established at the east end of the upper floor of the stone building in 1965.[18]
- The 4,000-square-foot Abbey Restaurant was established at the west end of the upper floor in 1973.[19]
- By 1972, the upper floor had various commercial occupants including the candle factory, retail shops, and the restaurant, and the lower floor housed the Freemark Abbey Winery.[20]
- Silverado Brewing Company occupied the former Abbey Restaurant from 1995 to 2013.[21]
- Two Birds/One Stone occupied the restaurant space from 2016 to early 2019.
- Roadhouse 29 occupied the restaurant space from early 2019 to 2020.
- In 2023, the building is occupied solely by Freemark Abbey Winery.

Restaurant Building (3010 SR 29)

Exterior

The one-story-over-basement building contained food and wine-related businesses from 1973 to 2001, and it has been vacant since that time. The wood-frame building features an L-shaped footprint, clad in wood board-and-batten siding, and is capped by a combination of modified gable and flat roof forms. A large, overgrown outdoor dining area is located on the northeast side of the building.

[18] Land Use permit no. 76-65, July 6, 1965.

[19] "New Buildings and Remodelings," *Napa Valley Register,* March 31, 1973, 18C.

[20] "Preliminary Parcel Map," September 5, 1972, included in "P09-00541_022-130-020_2009.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[21] "History – The Property," *Inn at the Abbey,* accessed August 1, 2023, https://www.innattheabbey.com/history-property.

The primary (northwest) façade faces a paved parking lot (**Figure 12**). It features a stone chimney flanked by fixed windows. The façade terminates in a wood fascia at the roofline. Immediately north of the façade is a wood trellis that marks the pedestrian entrance to the restaurant.

SOURCE: ESA 2023

Figure 12
Restaurant building, primary (northwest) façade, view facing southeast

The secondary (southwest) façade faces a paved parking lot and SR 29 (**Figure 13**). It features two window bays with sliding, aluminum-sash windows. One of the windows features a curved transom. The area between the windows is recessed, and a concrete staircase provides access to a pair of glazed, wood-frame doors at the basement level directly below.

SOURCE: ESA 2023

Figure 13
Restaurant building, secondary (southwest) façade, view facing northeast

The side (southeast) façade features a blank wall below the gable end. The east end of the façade features two three-part, vinyl-sash windows below a flat roof (**Figure 14)**. The rear (northeast) façade is heavily obscured by mature trees and overgrowth (**Figure 15**).

SOURCE: ESA 2023

Figure 14
Restaurant building, southeast façade, view facing northwest

SOURCE: ESA 2023

Figure 15
Restaurant building, rear (northeast) façade, view facing southeast

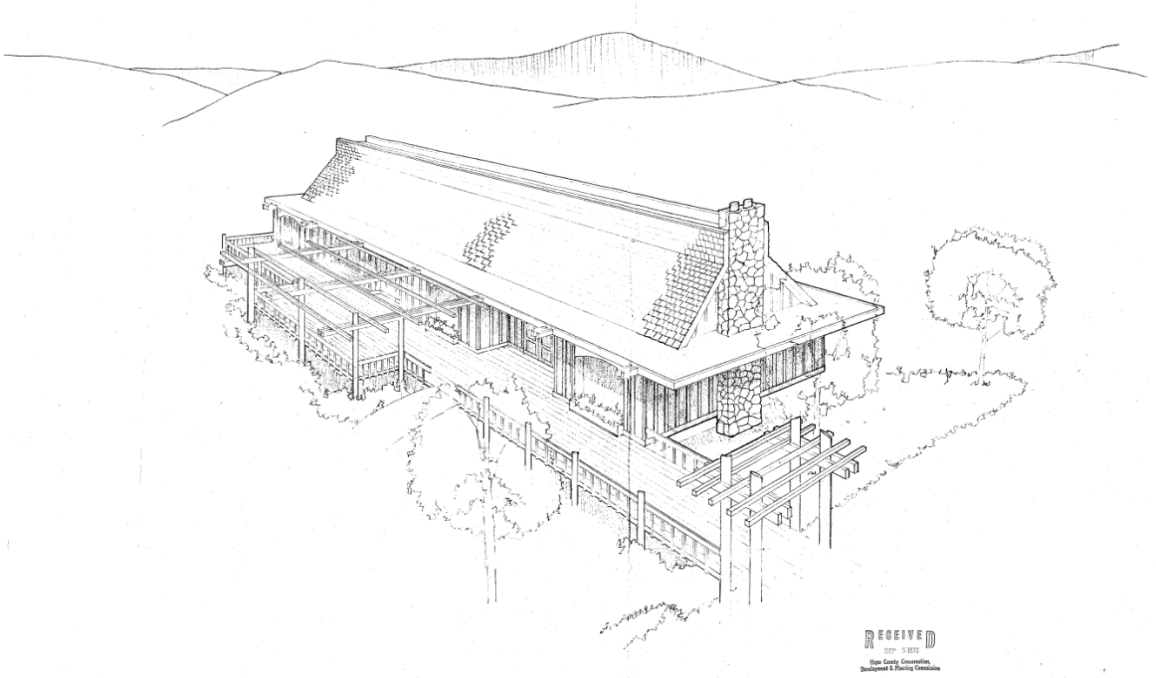
Interior

The building is currently vacant and not open to the public.

Construction Chronology and Alterations

The building and its associated open-air patio and outdoor garden court were constructed in 1973 by then-owners Wine Tasters, Inc. (**Figure 16**). The building and landscaped areas operated as "The Wine Garden," a retail wine and delicatessen business,[22] and opened for business in fall 1973:

> *The new wine center […] includes a redwood building and a spacious deck and garden for enjoyment during clement weather. The building, designed by Leslie Niemi and constructed by Glen Bobst, General Contractor, features a lofty, beamed ceiling and massive stone fireplace flanked on each side by vertical windows of stained glass embedded in epoxy. […] The garden, designed and installed under the direction of Ina Hart, Consultant, is an attractively landscaped area where, on pleasant days, customers may enjoy wine tasing in the open. Easy access is provided by a ramp from the deck which overlooks the garden. One of the features of the outdoor area is a small waterfall and pool.*[23]



SOURCE: Planning file "37273_022-130-021-000_1972.pdf," on file at Napa County Planning, Building, and Environmental Services Department

Figure 16
Architectural rendering of the restaurant building, 1972

In 1976, a new concrete staircase leading to a new basement-level entrance was constructed on the southwest façade.[24] The following year, a wood-frame trellis was constructed at the upper level of the new stairs.[25] A window on the rear (northeast) façade was replaced by a pair of doors in 1979.[26] A portion of the rear dining

[22] Richard P. Mendelson (Attorney at Dickenson, Peatman & Fogarty), "Re: Brava Terrace Restaurant Use Permit," memo to Jeffrey Redding (Director of the Napa County Conservation, Development, and Planning Department), November 6, 1995, included in "747576 - PBES-COR - 5-17-1976 - 022-130-020-000 - FREEMARK ABBEY-PLANNING-USE-1976.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[23] "The Wine Garden Opens," *St. Helena Star,* November 8, 1973, 17.

[24] Building permit no. B21013, July 22, 1976.

[25] Building permit no. B21521, February 22, 1977.

[26] Building permit no. B25610, July 12, 1979.

terrace was enclosed in 1996,[27] and a portion of the building was reroofed the same year.[28] No building permits issued after 1996 were provided by the Napa County Planning, Building, and Environmental Services Department, and this may indicate that the building has been vacant since Brava Terrace closed in 2001.

Ownership and Occupancy History

Owners

Preliminary archival research did not confirm the ownership history of the building. Building permit records suggest that the building may have been owned by the various businesses that occupied it. Ownership was transferred to Jackson Family Investments III, LLC, in December 2019.

Occupants

- 1973–76: The Wine Garden
- 1976–ca. 1985: the upper floor functioned as a bakery and ice cream shop, and the basement functioned as a deli and wine tasting space.[29]
- Ca. 1985–90: Knickerbocker's Restaurant
- 1990–2001: A restaurant named Brava Terrace became the sole occupant of the building. Food and beverage service operated on the upper floor, open-air patio, and garden court, and the basement was used for storage only.[30]
- Ca. 2001–present: vacant

Commercial Building (3000 SR 29)

Exterior

The one-story-over-basement commercial building features a rectangular footprint, is clad in textured stucco, is capped by a flat roof with deep overhangs, and is designed in the Streamline Moderne style of architecture. Typical fenestration includes fixed, aluminum-sash windows and glazed, aluminum-frame replacement door assemblies with fixed sidelights and transoms.

The primary (southwest) façade faces SR 29 (**Figure 17**). It features two entries flanked by glass block pilasters and four pairs of windows. One of the windows has been walled over on the interior. The corners of the façade are curved and constructed of glass block.

The secondary (northeast) façade faces a paved parking lot and features one entrance (Figure 17).

[27] Building permit no. B56772, January 22, 1996.
[28] Building permit no. B57165, May 22, 1996.
[29] Richard P. Mendelson (Attorney at Dickenson, Peatman & Fogarty), "Re: Brava Terrace Restaurant Use Permit."
[30] Ibid.

SOURCE: ESA 2023

Figure 17
Commercial building, primary (southwest) and secondary (northwest) façades, view facing southeast

The rear (northeast) façade faces a paved parking lot and is accessed by concrete steps covered by a canvas awning (**Figure 18**). It features two entries and a single window that has been walled over on the interior, and an uncovered deck is located along the south half of the façade. Access to the basement is through a recessed opening below the deck. The side (southeast) façade features one entry and one window, and the deck continues along the length of the façade.

SOURCE: ESA 2023

Figure 18
Commercial building, rear (northeast) façade, view facing southwest

Interior

The building is currently vacant and not publicly accessible.

Construction Chronology and Alterations

According to Napa County records, the commercial building at 3000 SR 29 was constructed in the late 1940s and originally functioned as a restaurant/bar.[31] Approval to construct the Traveler's Inn restaurant (as the building was initially known) was granted by the Napa County Planning Commission on June 20, 1946. As originally designed, the one-story-over-basement building measured 3,340 square feet and featured a dining area, dance floor, bar, kitchen, three restrooms, and a storage room.[32] Restaurant use of the building continued into the 1960s when it was converted into an antique store.[33]

Building permit records for the following alterations completed between 1968 and 2004 are on file at the Napa County Planning, Building, and Environmental Services Department.

- In 1968, an interior wood-frame partition was removed.[34]
- In 1971, a small area for a real estate office was created within the building.[35]
- The building was reroofed in 2002.[36]
- An awning was erected over existing exterior stairs on the rear façade in late 2003 or early 2004.[37]
- An awning was erected above an existing exterior deck on the rear façade in 2004.[38]

In 2000, an evaluation of the building noted that it "[appeared] to be substantially unaltered" at that time.[39] Review of a 2000 photograph indicates that additional alterations were made in subsequent years including replacement of all exterior doors, the replacement of an original window on the northwest façade with a doorway, the removal/patching of an original doorway on the northwest façade, and the removal of the original sheet metal band around the perimeter of the roof overhang (**Figure 19**).

[31] "Napa County Board of Supervisors' Agenda Item Submittal, March 23, 1993, 1; included in the file for Building permit no. B92020, on file at Napa County Planning, Building, and Environmental Services Department.

[32] Napa County Zoning Administrator, "Certificates of Extent of Present Legal Nonconformity: Department Report and Recommendation," December 13, 1991; included in the file titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[33] "Napa County Board of Supervisors' Agenda Item Submittal, March 23, 1993, 1; included in the file for Building permit no. B92020, on file at Napa County Planning, Building, and Environmental Services Department.

[34] Building permit no. B8314, November 30, 1968.

[35] Building permit no. B14370, February 23, 1971.

[36] Building permit no. B02-1247, September 9, 2002.

[37] Building permit no. B03-1956, December 15, 2003.

[38] Building permit no. B04-00287, March 12, 2004.

[39] Caltrans, DPR 523 form-set for 3000 St. Helena Highway North (P-28-002464), May 2000, on file at the Northwest Information Center.

SOURCE: DPR 523 form-set for 3000 St. Helena Highway North (P-28-002464), May 2000.

Figure 19
Commercial building, 2000

Ownership and Occupancy History

Owners

- 1935–73: George Mosebach[40]
- 1973–82: Executor of the Estate of George Mosebach[41]
- 1982–ca. 1996: Merle Meyer (daughter of George Mosebach)[42]
- Ca. 1996–2013: Norman Alumbaugh[43]
- 2013–present: Jackson Family Investments III, LLC[44]

Occupants

- Ca. 1946–61: Traveler's Inn (restaurant, bar, and dance hall)
- 1961–69: Half-Way Inn (restaurant, bar, and dance hall; **Figure 20**)[45]
- 1969–83: Now & Then Antiques (first antique store)[46]

[40] Napa County Zoning Administrator, "Certificates of Extent of Present Legal Nonconformity: Department Report and Recommendation," December 13, 1991; included in the file titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[41] Ibid.

[42] Ibid.

[43] Assessor data for 1190 York Lane, St. Helena, CA (APN 022-220-028-000), *ParcelQuest,* accessed August 9, 2023, www.parcelquest.com.

[44] Ibid.

[45] "Half Way Inn to Have Hospitable Opening," *St. Helena Star,* November 23, 1961, 3.

- 1971–74: Mt. St. Helena Realty (portion of the building)[47]
- 1983–84: Second antique store[48]
- 1984–85: Third antique store[49]
- 1986–87: LaVelle Gallery (fine art gallery)[50]
- 1987–ca. 2002: Elrod Antiques (fourth antique store)[51]
- 2002-03: Eagle & Rose Café (restaurant) and Artisan Tasting Room (wine tasting)
- 2004: Café 2952 (restaurant)
- 2006–13: A Dozen Vintners (wine tasting)
- 2008: Iron Horse Gallery (fine art gallery)
- 2013–present: Vacant

SOURCE: *St. Helena Star,* November 23, 1961.

Figure 20
Half-way Inn, 1961

[46] Napa County Zoning Administrator, "Certificates of Extent of Present Legal Nonconformity: Department Report and Recommendation," December 13, 1991; included in the file titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[47] Ibid.

[48] Ibid.

[49] Ibid.

[50] Ibid.

[51] Ibid.

[52] File titled "-PBES-COR – 3-7-1986 - 022-220-001-000 - LAVELLE FINE ARTS GALLERY-PLANNING-PCOR-1986.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

Motel (1189 Lodi Lane)

Exterior

The building located at 1189 Lodi Lane is a one-story, rectangular-plan motel that contains five residential units and an office. The building was constructed in multiple phases and conjoined in 1984. The north portion of the building (constructed ca. 1938) is capped by a gabled roof covered with asphalt shingles, and the south portion (constructed ca. 1957) is capped by a shed roof. The building is clad in T1-11 (plywood) siding. Fenestration includes sliding, aluminum-sash windows; flush wood doors; and paneled, partially glazed wood doors.

The primary (northwest) façade faces Lodi Lane, and all entries to the units and office are located on this façade (**Figure 21**). The four southernmost units feature a continuous, angled overhand, the underside of which is clad in wood shingles. The overhand is supported by angled walls. A small niche for storage is located immediately north of the northernmost angled wall. The secondary (southwest) façade faces a paved parking lot and features no fenestration or notable details. The rear (southeast) façade faces a small garden. It features aluminum-sash windows, and several window openings appear to have been covered with wood boards. The rear façade terminates in exposed rafter tails at the roofline. The northeast façade was not visible at the time of the survey.

SOURCE: ESA 2023

Figure 21
Motel, primary (northwest) façade, view facing southeast

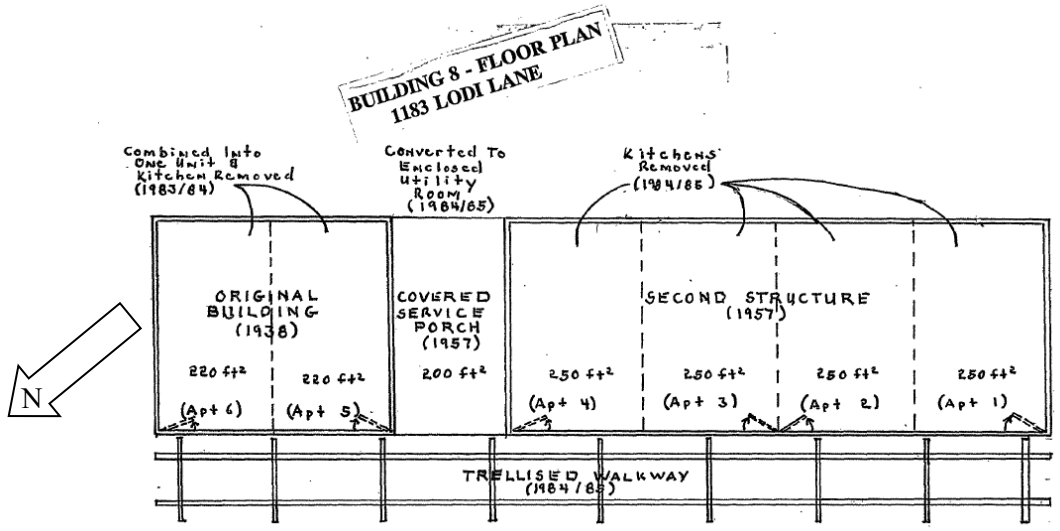
Interior

Multiple residents occupy the building, and the interior is not publicly accessible.

Construction Chronology and Alterations

According to Napa County records, "The first [(i.e., earliest)] portion of the 'motel' [at 1189 Lodi Lane] was built in the mid-1930s as a two-unit studio apartment building. In the [late] 1950s a separate four-unit studio apartment building, connected to the two-unit structure [by a covered service porch], was constructed. In the early to mid-1980s, the service porch was enclosed [, a trellised walkway was added along the length of the primary façade, the original two residential units were combined into one unit,] and the kitchens removed from these structures creating the 'motel' rooms that exist today."[53,54] This construction chronology is illustrated in **Figure 22**.

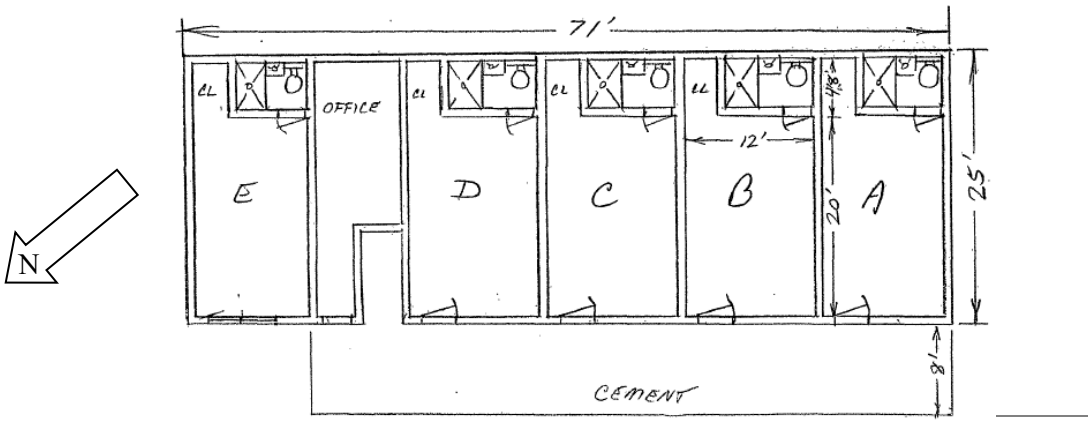
[53] "Napa County Board of Supervisors' Agenda Item Submittal, March 23, 1993, 1; included in the file for Building permit no. B92020, on file at Napa County Planning, Building, and Environmental Services Department.



SOURCE: File titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

Figure 22
Illustrated construction chronology of the motel, 1993

A review of historic floor plans indicates that the 1930s-era portion of the building may have been reduced in size sometime after 1984 (when the two original units were combined) and before 1992 (**Figure 23**). Unspecified building repairs were completed in 1985,[55] and alterations made in 1998 included upgraded utilities (electrical, air conditioning, heating, gas, and water).[56]



SOURCE: Building permit no. B92020, on file at Napa County

Figure 23
Floor plan of the motel, 1992

[54] Napa County Zoning Administrator, "Certificates of Extent of Present Legal Nonconformity: Department Report and Recommendation," December 13, 1991; included in the file titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[55] Ibid.

[56] Building permit no. B98-01676, December 17, 1998.

Ownership History

- 1935–73: George Mosebach[57]
- 1973–82: Executor of the Estate of George Mosebach[58]
- 1982–ca. 1996: Merle Meyer (daughter of George Mosebach)[59]
- Ca. 1996–2013: Norman Alumbaugh[60]
- 2013–present: Jackson Family Investments III, LLC[61]

Historic Context

Spanish and Mexican Period

The area was first explored by Euro-Americans in 1823 by Father Jose Altamira and Alfred Jose Sanchez. Fearing Russian encroachment, they headed north from San Francisco, passing through San Rafael and Olompali, exploring the Sonoma, Napa, and Suisun Plains for potential sites for new missions. Mission San Francisco Solano, the northernmost Spanish Mission, was established in 1823 in Sonoma. Following secularization of the missions in 1833, the awarding of land grants accelerated and encouraged the European and American settlement of the Valley.[62]

George Yount first arrived in the Napa Valley in 1831. General Mariano Vallejo awarded Rancho Caymus (11,887 acres), the first land grant to a European in Napa Valley, to Yount in 1836. Governor Juan Alvarado granted Rancho Carne Humana to Edward Turner Bale in 1841. Rancho Carne Humana encompassed approximately 18,000 acres, including a portion of the project area, in Napa Valley north of Rancho Caymus.[63]

American Period

In 1848, after a brief conflict, Mexico ceded California to the U.S. With the discovery of gold that same year and the subsequent gold rush of the early 1850s, the population of California grew exponentially. As a previously established American-occupied area, Napa County drew in many of the miners disillusioned by the gold fields and the severe winter in the Sierra Nevada. Saw mills, timber harvesting, and cattle ranches provided employment within Napa Valley. Between 1840 and 1845 many emigrant American families settled in the Napa Valley area. It was in 1848 that Napa City was laid out by Nathan Coombs on property he acquired from Nicholas Higuera's Rancho Entre-Napa. The burgeoning population helped build Napa City from a tent city along Main Street to the primary business and economic center for the Napa Valley it is today.

---

[57] Napa County Zoning Administrator, "Certificates of Extent of Present Legal Nonconformity: Department Report and Recommendation," December 13, 1991; included in the file titled "91-2_022-220-01-000_1992.pdf," on file at Napa County Planning, Building, and Environmental Services Department.

[58] Ibid.

[59] Ibid.

[60] Assessor data for 1190 York Lane, St. Helena, CA (APN 022-220-028-000), *ParcelQuest,* accessed August 9, 2023, www.parcelquest.com.

[61] Ibid.

[62] Warren A. Beck and Ynez D. Haase, *Historical Atlas of California* (Norman, OK: University of Oklahoma Press, 1974), 18.

[63] Mildred Brooke Hoover, Hero Eugene Rensch, Ethel Rensch, and William N. Abeloe, *Historic Spots in California,* Fourth edition, revised by Douglas E. Kyle (Stanford, CA: Stanford University Press, 2002).

Viticulture and Winemaking in the Napa Valley

George Yount planted the first grapes in the Napa Valley in 1839. Soon after, other pioneers, such as John Patchett and Hamilton Walker Crabb, helped introduce the first *Vitis vinifera* grapes to the area. In St. Helena, Charles Krug, son-in-law of Edward Turner Bale, is credited with establishing Napa Valley's first commercial winery in 1861. His success sparked a wave of new growth in the wine industry, and by 1889 there were more than 140 wineries in operation in the Valley. Calistoga pioneer Samuel Brannan was also one of the first to cultivate grapes in the Valley.

The late 19th and early 20th centuries were not kind to the Napa County wine industry. In the early 1890s, the phylloxera aphid (*Daktulosphaira vitifoliae*) infested and killed off most of the vineyards. Many landowners gave up on wine grapes and replanted with other crops, primarily fruit and nut trees. Those that survived the phylloxera epidemic were hit again in 1920 with the Volstead Act (more commonly known as Prohibition and discussed below in more detail), which outlawed almost all commercial sale of alcohol. Prohibition was repealed in 1933, but by then most of the old vineyards were gone and the wineries shuttered. The Napa wine industry slowly regrew and is now the most prominent wine producing region in the U.S.[64] Today the area's economy is based on viticulture, wine making, and tourism based on the wine industry.

One factor that has made Napa Valley a prime wine grape growing region is its unique soil composition. A key factor in this soil development was the Napa River, which has changed alignments over time and flooded the area on a regular basis. Flooding has been good for soil development, but is not good for growing grapes, or for the communities in the reach of the river's flood plain. Since settlers began keeping track of such notable events, more than 20 serious floods have been recorded from 1862 to the present day.

Josephine Tychson and Tychson Cellar

Josephine Marlin Tychson was born on March 25, 1855, in San Lorenzo, California. Her father, John Marlin, was born in 1822 to a prominent Pennsylvania farming family. After his marriage to Eliza Bowers, Marlin joined a growing group of Anglo-American men who sought employment in the Pacific Northwest's burgeoning logging industry. In 1852, Marlin sent for his wife and two young children who had remained on the East Coast, and eventually settled his young family in the San Lorenzo area of Mt. Eden Township. The Marlins became successful farmers in San Lorenzo and eventually had a total of eight children, one of which was Josephine.[65]

Historical records indicate that Josephine Marlin Tychson was the first woman to build and operate a commercially producing winery in California. In 1877, twenty-one-year-old Josephine married John C. Tychson, a Danish immigrant who had been naturalized in San Francisco in 1873. Limited historical records suggest that Tychson, like many Danish immigrants who journeyed to California during the mid-19th century, eked out a living as a farmer. In 1881, the Tychsons approached real estate entrepreneur E.W. Woodward with the intention of purchasing vineyard land in Napa County. The couple sought a parcel of land owned by Captain William James Sayward, a retired sea captain and lighthouse builder. Sayward had purchased the land—which had previously been part of the original 1841 Rancho Carne Humana land grant—from winemaker Charles Krug in 1867. Sayward's 147-acre parcel, then known as Lodi Ranch, consisted of 26 acres of vineyards and a private residence. The official 1881 land deed indicates that Sayward sold the property to the Tychsons for $8,500.[66] The

[64] Napa Valley Wine Museum and Lin Weber, *Images of America: Napa Valley Wine Country* (Charleston, SC: Arcadia Publishing, 2004).

[65] Prchal, 1-5.

[66] Ibid., 9-10.

Tychsons and their two young children Annette and John C. Jr. moved into the former sea captain's home on the property, which later became known as "Tychson Hill."

The couple proceeded with plans to establish a winery on Tychson Hill, spending the next several years developing the existing vineyards. Those plans were interrupted tragically in April 1886 when, during a brief stay in Oakland, John Tychson died suddenly and unexpectedly by suicide.

Remarkably, progress at Tychson Hill continued at a rapid pace. In three short months after the loss of her husband, Josephine began construction of a 2,500-square-foot redwood building that would serve as a winery on the present-day site of the stone building at 3022 SR 29. An August 27, 1886, article published in the *St. Helena Star* also noted that Mrs. Tychson's construction project included a cellar with an estimated capacity of between 20,000 and 30,000 gallons.[67] Construction of the initial redwood building was completed in time for that year's grape harvest.[68]

Tychson successfully produced wine at Tychson Cellar with the collaboration of her foreman, an experienced vintner named Nels Larsen, for the next eight years. The 1889-90 *Napa and Sonoma Counties Directory* listed Josephine Tychson as a "fruit grower and wine maker." An 1891 report of the California Board of Viticultural Commissioners provided even more information of Tychson's activities. It noted that the Tychson Cellar's vineyards had grown to encompass 65 acres of wine grapes. It further noted that in 1890, the winery had crushed 110 tons of grapes, producing a variety of zinfandel, riesling, and burgundy wines.[69]

The Tychson Cellar soon experienced an abrupt reversal of fortunes. In 1893, an outbreak of phylloxera swept through the Napa Valley.[70] The parasite, which destroys the roots of vines, destroyed at least 10 acres of the Tychson vineyards. In 1894, after eight years of operation, Tychson sold the winery and approximately 10 surviving acres of vineyards to her long-time foreman, Nels Larson. Tychson would spend her remaining years living in the two-story home on the original Tychson Hill property. She died December 19, 1939, after suffering a heart attack at the age of 84. An obituary published in the December 22, 1939, edition of the *St. Helena Star* noted that Josephine Tychson was a "pioneer resident" of St. Helena and the wife of the late John Tychson but made no mention of her achievements as a winemaker and entrepreneur.[71]

Tychson's contributions to the region's wine industry would go largely ignored until the 1980s. In conjunction with the centennial celebration of Freemark Abbey, the winery threw a tribute to Josephine Tychson and designated November 3–4, 1986, as "Josephine Tychson Days."[72]

Antonio Forni and Lombarda Cellar

Antoni Forni was born in 1859 in Lombardi, Italy. In 1876, Forni immigrated from his native Italy to Canada before eventually making his way to California's Napa Valley with the hopes of making a living as a farmer.

---

[67] William F. Heintz, *Freemark Abbey Winery of Tychson Hill, St. Helena, California* (Glen Ellen, California: Research of Glen Ellen, 1975), 8; Prchal, 12.

[68] Helen Niemi, "Forward: Freemark Abbey Winery," in Dolly Prchal, "Josephine Marlin Tychson: The First Woman Winemaker in California," *Gleanings: Napa County Historical Society* 3, no. 4 (December, 1986), on file at the Napa County Historical Society.

[69] Heintz, 15; Prchal, 13.

[70] Mark Gudgel, *The Rise of Napa Valley Wineries: How the Judgment of Paris Put California Wine on the Map* (Charleston, SC: American Palate, A Division of The History Press, 2023), 44.

[71] "Mrs. Josephine Tychson, pioneer resident, passes away," *St. Helena Star,* December 22, 1939, 1; Prchal, 17.

[72] Jason Brandt Lewis, "The Abbey of Freemark," n.d., on file at the Napa County Historical Society; Anne Stanley, "Valley winery celebrates 100-year birthday Tuesday," *Napa Valley Register,* November 1, 1986, 1-2.

Soon after his arrival, Forni began a long and successful career in the wine industry. In 1879, Forni entered the employ of William Scheffler, the owner of Edge Hill in St. Helena. In 1881, Forni became the foreman of the Natoma Wine Company's vineyard in nearby Folsom, where he held the position for three years. Forni returned to Italy in 1885 for an extended visit to his family. While there, Forni met and married his wife, Marianna Forni. In 1886, the newly married couple returned to St. Helena, whereupon Forni and his long-time friend Luigi Vasconi purchases the Europa Hotel from Gaetano Rossi. The partners managed the hotel on Spring Street until it was destroyed by a fire in October 1890.[73] Antonio Forni established strong ties within the St. Helena community, serving twice as an elected member of the Board of Town Trustees (in 1894 and 1906). According to his obituary in the *St. Helena Star,* "Mr. Forni took an active interest in politics as well as in all public matters and his influence was eagerly sought in contests at the polls, as well as when questions of local interest were up for consideration."[74]

In 1895, Forni decided to pursue wine manufacturing full-time and subsequently leased the former Tychson Cellar from Nels Larson. Forni purchased the winery's 10-acre property in 1898 and quickly initiated plans to enlarge the existing redwood winery building.[75]

In 1899, construction of a one- and two-story stone building designed by Forni's long-time associate and master stonemason Gaetano Rossi began on Tychson Hill. Rossi was assisted by stoneworker C. Martini and carpenter G. O. Jursch. Forni christened the new 90-foot x 175-foot winery building "Lombarda Cellar" in honor of his hometown in Italy in 1892.[76] At the time of initial construction, the one-story portion of the building had a gravel floor and was used for producing and fermenting wine. The rear two-story portion of the building had a cement floor and contained the winery's storage tanks, and the building stone held a capacity of 350,000 gallons.[77]

In 1900, the Lombarda Cellar Winery comprised the stone building, 15 acres of vineyards, a foreman's residence, and an olive grove, and Antonio Forni owned and operated the winery until his death in 1908.[78] Marianna Forni inherited the winery upon her husband's death, and she hired Antonio's cousin, Charles Forni, to take over the daily operations of the winery.[79] During Prohibition (discussed below in more detail), Lombarda Cellar was among the wineries that produced sacramental wine for the Catholic Church.[80] In 1932, the winery briefly resumed operation under the management of Joe Gaggetta and Walter Martini. The following year, the winery was sold to the Napa Cantina Winery Corporation, which was headed by Patrick Murphy and James Mahoney of Crockett, California. Mahoney oversaw the operation of the winery until 1937 when, due to a mortgage foreclosure, ownership was transferred back to Marianna Forni. For the next three years, the winery halted production of its wines, although wine under the Lombarda Cellar name continued to be manufactured and sold by Napa Valley winemaker Walter Martini.[81]

---

73 "Antonio Forni Laid to Rest," *St. Helena Star,* August 28, 1908.

74 Ibid.

75 Gudgel, 42.

76 "Winery 50 Years Old Is Sold By St. Helena Owner," *The Sacramento Bee,* July 27, 1940, 20.

77 William F. Heintz, "Wineries of Uncertain Vintage," *San Francisco Examiner,* December 3, 1978, 352.

78 "Antonio Forni Laid to Rest," St. Helena Star, August 28, 1908, 1.

79 Evans & De Shazo, Inc., *Current Condition Assessment and Secretary of the Interior's Standards Review for the 1903 Forni House, Located at 1551 Oak Avenue, St. Helena, Napa County, California*, prepared for Desmond Land Use Consulting, May 31, 2018.

80 "History," *Freemark Abbey,* accessed August 10, 2023, https://www.freemarkabbey.com/history.

81 James T. Lapsley, *Bottled Poetry: Napa Winemaking from Prohibition to the Modern Era* (Berkeley, CA: University of California Press, 1997), 33–34.

Prohibition Era and the Great Depression: 1920–41

The following overview of the Prohibition Era (1920–33) and Great Depression (1929–41) in the Napa Valley is an excerpt from a 2020 historic resource evaluation prepared by JRP Historical Consulting:

> *Despite the positive growth in Napa wineries during the 1900s and 1910s, trouble loomed on the horizon. Growing agitation against the sale and consumption of alcohol concerned growers. The Eighteenth Amendment became effective in 1920 banning the production, sale, and transportation of intoxicating liquors. The Volstead Act provided the regulatory and punitive framework to enforce Prohibition. While dozens of valley winemakers were raided and arrested by federal law enforcement, vintners also looked to exceptions in the act for a means to continue their livelihood. Those who persevered through Prohibition did so through the sale of sacramental wines and wines permitted for medicinal uses. [Lombarda Cellar was among the wineries that produced sacramental wine for the Catholic Church.[82]] Others found markets for unfermented grape juices, as well as products for innovative home vintners. […]*
>
> *Various shifts in agriculture occurred in Napa Valley during Prohibition in the 1920s and the Great Depression in the 1930s. Some Upper Napa Valley land owners [excluding Marianna Forni who owned Lombarda Cellar] sold to San Francisco Bay Area investors during the period leading up to the passage of the Eighteenth Amendment, and others expanded cooperative efforts, many moving away from growing grapes. […]. During this period many Napa Valley farmers switched from grapes to plums, and by 1928 prunes (dried plums) brought more money to Napa County than grapes. This occurred, in part, because the grape market collapsed as demand for alternate uses decreased and home wine efforts waned in the face of easily available bootlegged hard liquor. While prunes provided more money than grapes for several years, walnuts were also a relatively successful alternate crop during this period. During the Depression attempts to reenergize the economy in Napa Valley had minimal effect. Fruit Industries, Inc. was to be a cooperative marketing and price stabilization tool for vineyardists in California. In order to secure federal subsidies 85% of California vineyardists had to join. Napa Valley vineyardists wary of federal involvement largely declined to participate. Their wariness proved justified when prices for grape varieties were fixed for the benefit of Central Valley raisin growers, which widened a rift between Napa Valley and Central Valley vineyardists. While Prohibition was repealed in 1933, the Depression continued to impact Napa Valley vintners and slowed the revival of the industry as the demand for fine wines had plummeted both domestically and internationally. Only 15 large wineries and miscellaneous bootleggers survived Prohibition in Napa County. Charles [Forni, who had previously managed Lombarda Cellar's operations,] helped the wine industry revive by matching new owners with defunct operations. In addition, the reputation of California wines had been diminished by Central Valley vintners producing inferior product that was now associated with the state. Also, thirteen years of Prohibition had reduced knowledge about the qualities of fine wine, both among both vintners and drinkers, resulting in easily bootlegged liquors and soft drinks being in a more prominent position. California vintners formed the Wine Institute in 1934 to again share information on the growing and fermenting of fine wines.[83]*

Freemark Abbey Winery

The winery, along with many others in the Napa Valley, experienced a revival from the 1940s to the 1960s. During this period, an influx of wine entrepreneurs brought new techniques and new capital to a region largely

[82] "History," *Freemark Abbey,* accessed August 10, 2023, https://www.freemarkabbey.com/history.

[83] JRP Historical Consulting, *Historical Resources Evaluation Report for the Vine Trail: St. Helena to Calistoga, Napa County, California,* prepared for Napa Valley Transportation Authority, May 2020 , 17–18.

depleted after Prohibition and the Great Depression. In 1940, Marianna Forni sold the Lombarda Winery to retired Southern California businessman Albert "Abbey" Ahern. Ahern deferred future management of the winery to his son, Michael Ahern, and appointed French wine maker and chemist Dr. Leon Brendell as executive. The new owners, which included Ahern Sr. and his business partners Charles Freeman and Mark Foster, planned extensive changes for the site, including a new roof, the rearrangement of cooperage, and other improvements. The new owners planned to produce dry wines under the new brand name that was an amalgamation of the three owners' names: Freemark Abbey.[84] The winery experienced a resurgence under the new ownership, until it eventually closed after Ahern's death in 1959. During this period, Freemark Abbey enjoyed a positive reception to several of its wines, particularly its pinot noir, which won the gold medal at the 1952 California State Fair.[85]

In 1967, Freemark Abbey was purchased by a partnership consisting of Charles Carpy, Laurie Wood, Ralph Bradford "Brad" Webb, Bill Jaeger, John Bryan, Dick Heggie, and Jim Warren.[86] The managing partner was Charles "Chuck" Carpy, who was the grandson of a prominent wine merchant who immigrated to Napa Valley from Bordeaux in 1854. During the 1960s, Carpy began to purchase and manage vineyards in the Rutherford area before building the partnership that purchased Freemark Abbey.[87] The partners hired contractor John Cavuglieri of Calistoga to update the winery and its cellars. The extensive renovations consisted of structural improvements to extant buildings and a complete overhaul of the lower cellars, in which Cavuglieri replaced the drainage, installed a new sewage system, added hot water lines and electricity.[88] In 1969, the owners purchased W. E. Cole Ranch to expand their vineyard acreage and at the winery built a new 50,000 case warehouse, bottling room, hospitality room, and retail space.[89]

The new partnership ushered in yet another resurgence for Freemark Abbey Winery. Brad Webb's academic background and experience in winemaking shaped the style of Freemark Abbey wines into the 1970s. The winery became best known for its chardonnay, petite sirah, and helped popularize the dessert wine, white riesling. The 1969 chardonnay was judged best at a tasting conducted by Robert Balzer in New York City.[90] It was the cabernet sauvignon made from John Bosché's 20 acres of vineyards in Rutherford, however, that Freemark Abbey became most famous for. Chuck Carpy and John Bosché formed a grower/producer partnership in 1968, wherein Freemark Abbey vintners made separate batches from Bosché's 1968 grapes.[91] The resulting 1970 Cabernet Bosché, which winemaker Jerry Luper blended with Merlot to create a more balanced and flavorful profile, won acclaim at the 1974 International Wine and Food Society convention in San Francisco.[92] In 1977, Freemark Abbey released its first Rutherford Hill Wines.[93] In 1988, the winery introduced a second vineyard,

[84] "Sold," *The St. Helena Star,* July 26, 1940, 1; Charles L. Sullivan, *Napa Wine: A History* (San Francisco: The Wine Appreciation Guild, Ltd, 1994), 229; Gudgel, 58.

[85] Sullivan, 230.

[86] Helen Niemi, "Forward: Freemark Abbey Winery," in Dolly Prchal, "Josephine Marlin Tychson: The First Woman Winemaker in California," *Gleanings: Napa County Historical Society* 3, no. 4 (December, 1986), on file at the Napa County Historical Society.

[87] Kevin Courney, "Napa Valley wine leader Chuck Carpy dies at age 68," *Napa Valley Register,* August 8, 1996.

[88] Freemark Abbey Winery, Profile on Charles (Chuck) Carpy, Managing Partner, n.d., on file at the Napa County Historical Society.

[89] Ibid.

[90] Ibid.

[91] Gudgel, 70; "The 10 Greatest Vineyards," *Wine Spectator,* December 1985, 1.

[92] Sullivan, 285; Gudgel, 75.

[93] Sullivan, 316.

Sycamore Vineyards, which was solely designated for cabernet sauvignon wines. By the 1990s, the Freemark Abbey Winery maintained an annual production of 36,000 to 37,000 cases of wine.[94]

Napa Valley wineries, including Freemark Abbey, gained widespread international acclaim during the late 1970s. The most significant event was the 1976 Wine Tasting, now more popularly known as the Judgment of Paris. During a blind wine tasting held at the prestigious Hotel Inter-Continental in Paris, a coalition of wine judges including the famously refined British wine taster Steven Spurrier, widely lauded vintages from California's Napa Valley. While Napa's Chateau Montelena's 1973 chardonnay won first place in the white wine category, Freemark Abbey was the only winery to receive recognition for both its white and red wines. Its 1972 chardonnay won sixth place in the white wine category, and its 1969 cabernet sauvignon placed tenth in the red wine category.[95] Both wines were made by Jerry Luper.[96] The results of the competition rocked the international wine community which had anticipated that older, more established European wineries would dominate the rankings. The results of the Judgment of Paris gave international praise and recognition to Napa Valley vintners, grape growing techniques, and wine production methods which continues to this day.

Design Professionals

Gaetano Rossi, Stonemason and Foreman of 3022 SR 29

Gaetano Rossi was born in 1848 in the Lombardy region of Italy, near the border with Switzerland. He trained as a stonemason in Italy and oversaw many masonry projects along the Rhine River for the Swiss government. He also served in the Italian army, eventually advancing to the rank of sergeant before emigrating to the United States in 1882.[97] Upon his arrival in St. Helena ca. 1882–83, Rossi entered the hotel business, operating the Europa Hotel on Spring Street. In 1886, he sold his interest in the Europa Hotel and followed the mining boom to Idaho where he lived until 1898. That year, he returned to St. Helena, established a business relationship with Antonio Forni, and oversaw the construction of Lombarda Cellar, specifically the extant stone building. While living in St. Helena, Rossi became an American citizen and received the honorary title of "Captain" for his marksmanship skills. Rossi died in St. Helena in 1933 at the age of 84.[98]

Leslie Niemi, Architect of 3010 SR 29

Architect Leslie William "Les" Niemi (1917–2005) designed the vacant restaurant building located at 3010 SR 29. He studied architecture at UC Berkeley and became a licensed California architect in 1953. He was employed by the renowned architecture firm Skidmore, Owings, and Merrill and completed design projects in San Francisco for the Crown Zellerbach Headquarters Office Building, the John Hancock Western Home Office Building, and a maintenance hangar for United Airlines at the San Francisco Municipal Airport (now the San Francisco International Airport).[99] Niemi moved to the Napa Valley from the Bay Area in 1960 and established the

[94] Freemark Abbey Winery, Profile on Charles (Chuck) Carpy, Managing Partner, n.d., on file at the Napa County Historical Society; Freemark Abbey Winery, Profile, "John Bryan, Owner of Sycamore Vineyards," n.d., on file at the Napa County Historical Society; Eleanor and Ray Heald, "Freemark Abbey: Focuses on Cabernet," *PWV* (September/October 1993), 18.

[95] Sullivan, 315; Gudgel, 88-93.

[96] "Jerry Luper and the University of Freemark Abbey," *Freemark Abbey,* accessed August 10, 2023, https://www.freemarkabbey.com/blog/freemark-abbey-legacy/jerry-luper-and-university-freemark-abbey.

[97] "Death Wins in Stepsons' Race to St. Helena," *Napa Valley Register,* January 28, 1933, 1.

[98] "Pioneer is Summoned," *St. Helena Star,* February 3, 1933.

[99] "Story of Architects," *St. Helena Star,* June 15, 1961, 5.

architecture firm Nichols & Niemi Associates with partner John Nichols.[100] The partnership dissolved in April 1962, and Niemi established a sole practitionership in St. Helena later that year.[101]

Niemi's wife, Helen Niemi, was the longtime manager of Freemark Abbey Winery's gift and gourmet shop,[102] and his selection as architect of 3010 SR 29 may have been a result of his wife's employment at the neighboring winery. Other buildings designed by Niemi include:

- the renovation of the original location of the Robert Louis Stevenson Silverado Museum at 1345 Railroad Avenue in St. Helena (1969; the museum later relocated to the St. Helena Public Library);[103]
- an addition to the United Methodist Church in St. Helena (1976);[104]
- the Bank of America at 1001 Adams Street in St. Helena (1976);[105]
- an addition to the St. Helena City Hall (1977);[106]
- the St. Helena Public Library (1979), a collaboration with architects Tom Faherty and Bill Byland;[107] and
- the Heitz Wine Cellars House at the southwest corner of Highway 128 and Silverado Trail (1980; appears to have been demolished).[108]

Architectural Themes

Stone Wineries of Napa County

The following excerpt is from the draft National Register nomination for the Freemark Abbey Winery prepared by Napa County Landmarks in 2015:

> *Beginning in the 1870s, the use of stone as building material in Napa Valley became the most desired medium for commercial and industrial buildings, particularly winery buildings, due to its availability and the need for fire protection and climate control. Sandstone and volcanic tufa were available from several local quarries in Napa Valley. Chinese, Italian, Scottish, Swiss and English laborers participated in quarrying and stone masonry construction throughout the region from the 1870s–1910s, and their work is still evident in many buildings, bridges, and stone walls throughout Napa County.*
>
> *As St. Helena prospered in the 1880s through the early 1900s, brick and stone commercial buildings began to replace wood frame buildings along Main Street. The use of stone in construction demonstrated the owner's intention in the permanence of their businesses and offered fire and theft protection and climate control. Several stone winery buildings and warehouses were constructed in the St. Helena area, indicating the growth and healthy economy for the viticulture industry during this time period. Stone wineries were erected by Charles Krug (1873), Beringer Brothers (1876), J.C. Weinberger (1876), F. Kraft/Spottswood (1884), B. Ehlers*

[100] Ibid.
[101] "Leslie Niemi Opens Adam St. Office," *St. Helena Star,* September 6, 1962, 1.
[102] "Helen M. Niemi" (obituary), *Napa Valley Register,* October 28, 1988, 10.
[103] Bernice Dunn, "Robert Louis Stevenson Museum at St. Helena Will Open Dec. 14," *Napa Valley Register,* December 6, 1969, 36.
[104] "St. Helena Church: Methodist Annex Finished," *Napa Valley Register,* November 19, 1976, 22.
[105] "St. Helena's Future Bank," *Napa Valley Register,* February 16, 1976, 12.
[106] "Design Accepted," *St. Helena Star,* June 16, 1977, 1.
[107] Kevin Courtney, "Ambitious Expansion for St. Helena Library," *Napa Valley Register,* January 19, 1989, 1.
[108] "Site Selected for 'Showhouse 1984,'" *Napa Valley Register,* May 4, 1984, 14.

(1886), William Bourn/Greystone Cellars (1885), V. Sattui (1890), and Carlo Rossini (1891). Designers included local craftsmen such as Pithie and Birkett, Captain Gaetano Rossi, S. N. Harrison, W.A. Harrison, John C Money, C.C. Bale, J.C. Mixon, and Hamden McIntyre, who is recognized as the most talented of these architects. Captain Gaetano Rossini designed Lombarda Cellar [(i.e., the stone building at the present-day Freemark Abbey Winery)].

The use of local sandstone and volcanic tufa in the construction of winery buildings in Napa had increased in use due to its ability to stay cool. Additionally, the [the stone building at the present-day Freemark Abbey Winery] utilizes a gravity-flow style design. The gravity-flow design was perfected by Hamden W. McIntyre, mechanical and civil engineer and the foremost winery designer in the Napa Valley area.[109]

Streamline Moderne Style

The commercial building at 3000 SR 29 is an example Streamline Moderne-style architecture. Described as a uniquely American architectural style, Streamline Moderne is considered the first "modern" style to gain widespread acceptance in mainstream America. Streamline Moderne—also referred to as Art Moderne, Moderne, Modernistic, or Depression Modern—was a conscious architectural expression of the speed and sleekness of the Machine Age. The style referenced the aerodynamic forms of airplanes, ships, and automobiles of the period with sleek, streamline rounded corners and curves, and evoked a machine-made quality. It evolved from the Art Deco movement and incorporated design elements associated with the International Style. Streamline Moderne-style buildings and structures were constructed throughout the United States beginning in the 1930s and peaked around 1940.[110]

In the San Francisco Bay Area, the period of construction of Streamline Moderne buildings began in the mid-1930s and continued through the early 1950s. The style often incorporated newly developed products such as Vitrolite glass and Carrara glass (tinted structural glass), decorative plastic laminates, porcelain enamel, extruded aluminum and stainless steel fittings and fixtures, ceramic veneer, glass block, and advancements in building technologies such as the ability to bend structural glass. The Streamline Moderne style was used frequently in the design of large institutional buildings. Boxier, less curvilinear Moderne interpretations of the style were often applied to public and other institutional buildings.[111]

Evaluation of Historical Significance

The 2008 Napa County General Plan defines "significant historical resources" as "buildings, structures, districts, and cultural landscapes that are designated Napa County Landmarks or listed in or eligible for listing in either the National Register of Historic Places or the California Register of [Historical] Resources" (Policy CC-18).

[109] While the draft nomination lists Stacey De Shazo and Brian Matuk as the preparers, ESA staff contacted Ms. De Shazo who confirmed that the nomination was actually prepared by Napa County Landmarks staff. Draft National Register of Historic Places Registration Form for Lombarda Cellar (Freemark Abbey Winery), prepared by Napa County Landmarks, 2015, on file at Evans & De Shazo, Inc., (Sebastopol, CA), 8–9.

[110] Mary Brown, *San Francisco Modern Architecture and Landscape Design, 1935-1970, Historic Context Statement,* prepared for the San Francisco Planning Department, 2010.

[111] Environmental Science Associates, *San Jose-Santa Clara Regional Wastewater Facility Streamline Moderne Industrial Historic District, p*repared for the San Jose-Santa Clara Regional Wastewater Facility, 2016.

National Register of Historic Places

Under the National Historic Preservation Act of 1966 (NHPA), a property (i.e., district, site, building, structure, or object) is eligible for listing in National Register of Historic Places (National Register) if it meets one or more of the following criteria (36 CFR 60.4):

A. Is associated with events that have made a significant contribution to the broad patterns of our history, or

B. Is associated with the lives of persons significant in our past, or

C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting at least one of the four criteria, a property must retain integrity, meaning that it must be able to convey its significance through the retention of seven aspects, or qualities, that in various combinations define integrity:

- *Location:* Place where the historic property was constructed;
- *Design:* Combination of elements that create the form, plans, space, structure, and style of the property;
- *Setting:* The physical environment of the historic property, inclusive of the landscape and spatial relationships of the buildings;
- *Materials:* The physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property;
- *Workmanship:* Physical evidence of the crafts of a particular culture or people during any given period in history;
- *Feeling:* The property's expression of the aesthetic or historic sense of a particular period of time; and
- *Association:* Direct link between an important historic event or person and an historic property.

Although there are exceptions, certain kinds of properties are not usually considered for listing on the National Register. These include religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years. Resources that are less than 50 years old are generally not considered eligible for the National Register. A buffer of five years has been added to the age-eligibility threshold to allow time for project implementation.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for or listed in the National Register of Historic Places (National Register) (PRC 5024.1[d][1]). These resources are termed "historical resources."

To be eligible for listing in the California Register, a historical resource must be significant at the federal, state, and/or local level under one or more of the following criteria (PRC Section 5024.1[c]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A historical resource must also possess integrity in addition to meeting the significance criteria to be considered eligible for listing on the California Register. Consideration of integrity for evaluation of California Register eligibility closely follows the seven aspects of integrity that apply to the National Register (listed above). The California Register defines integrity as the authenticity of a historic resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance (i.e., character-defining features). A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

Resources that are less than 45 years old are generally not considered eligible for listing in the California Register.

Previous Evaluations

Two buildings within the project area have been previously recorded and are on file at the Northwest Information Center: the stone winery building (P-28-001848) and the commercial building at 3000 SR 29 (P-28-002464). Both were evaluated for National Register eligibility only (not California Register eligibility), and summaries of previous evaluations are presented below.

Stone Winery Building (P-28-001848)

The stone building at the Freemark Abbey Winery was surveyed in 1978 as part of the Napa County Historic Resources Survey. No other features of the winery appear to have been surveyed or evaluated at that time. The stone building was assigned a National Register Status Code of "3,"[112] which at that time signified that the building "appears eligible for listing in [the National Register] to [the] person completing or reviewing [the survey] form."[113,114] The survey form indicates that the stone building appeared significant under the themes of "Economic/Industrial" and "Architecture."

[112] Napa County Historic Resources Survey, DPR form-set for Freemark Abbey Winery, 3022 St. Helena Highway North (P-28-001848), August 1978, on file at the Northwest Information Center.

[113] California State Office of Historic Preservation, *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historic Resources Inventory Directory*, 8, November 2004, https://ohp.parks.ca.gov/pages/1069/files/tab8.pdf.

[114] In 2023, the "3" code would be converted to "3S," meaning that the building "appears eligible for [the National Register] individually through survey evaluation." California State Office of Historic Preservation, "California Historical Resource Status Codes," March 1, 2020, https://ohp.parks.ca.gov/pages/1068/files/Resource-Status-Codes.pdf.

In 2000, the stone building was re-evaluated by Caltrans and recommended as not eligible for listing on the National Register under any criteria because a modern addition and alterations caused the building to no longer retain sufficient integrity to convey any historic significance.[115]

In either 2003 or 2009, the stone building was re-evaluated by Clark Historic Resource Consultants, Inc., and presumably found eligible for listing on the National Register, and a preliminary National Register nomination was prepared.[116,117] ESA staff have not reviewed this documentation.

In 2015, the stone building was nominated for listing on the National Register by Napa County Landmarks.[118] No other buildings or features were included in the nomination. The building had been found eligible under National Register Criterion A "for agriculture in California, for its very significant representation of Napa Valley's early commercial winemaking industry in the late nineteenth and early twentieth centuries" with a period of significance of "1899–1920, from the building's year of initial construction until wine production ceased at the start of Prohibition." It was also found eligible under Criterion C "as an exemplary specimen of late nineteenth and early twentieth century stone winery buildings in Northern California" with a period of significance of 1899.[119] According to OHP staff, the preliminary nomination was deemed incomplete and never finalized.[120]

In 2019, a *Cultural Resources Study for the Inn at the Abbey Project* was prepared by Tom Origer & Associates. A 2020 peer review by Ascent Environmental concluded that the study was not legally defensible for the following reasons: construction dates were not confirmed for two buildings in the study area, historic architectural resources meeting the age threshold (including the stone building) were not assessed for California Register eligibility, there was insufficient historic context on which to base evaluations, and a qualified professional did not prepare the report.[121]

Commercial Building (P-28-002464)

In 2000, the commercial building was evaluated by Caltrans and recommended as not eligible for listing on the National Register under any criteria.[122]

Evaluation – National Register and California Register

The four buildings that would be altered or demolished under the proposed project (i.e., the buildings at 3022 SR 29, 3010 SR 29, 3000 SR 29, and 1189 Lodi Lane) have been evaluated under National Register and California Register criteria, as presented below.

---

115 Caltrans, DPR 523 form-set for Freemark Abbey Winery, 3022 St. Helena Highway North (P-28-001848), May 2000, on file at the Northwest Information Center.

116 This document (with a 2003 publication date) is cited in Evans & De Shazo, Inc., *Current Condition Assessment and Secretary of the Interior's Standards Review for the 1903 Forni House, Located at 1551 Oak Avenue, St. Helena, Napa County, California,* prepared for Desmond Land Use Consulting, May 31, 2018.

117 This document (with a 2009 publication date) is cited in Draft National Register of Historic Places Registration Form for Lombarda Cellar (Freemark Abbey Winery), prepared by Napa County Landmarks, 2015, on file at Evans & De Shazo, Inc., (Sebastopol, CA).

118 Ibid.

119 Ibid., section 8, 10.

120 Amy Crain (State Historian II, California State Office of Historic Preservation), email to Johanna Kahn (Senior Architectural Historian, ESA), July 21, 2023.

121 Alta Cunningham (Architectural Historian, Ascent Environmental), *Peer Review of the Cultural Resources Study for the Inn at the Abbey Project (February 2019),* prepared for Trevor Hawkes (Planner, Napa County), September 8, 2020.

122 Caltrans, DPR 523 form-set for 3000 St. Helena Highway North (P-28-002464), May 2000, on file at the Northwest Information Center.

Criterion A/1 (Events)

Stone Building at 3022 SR 29

The stone building has housed operations related to winemaking for over a century, though it has not operated continuously. As one of approximately 500 commercial wineries operating in Napa County in 2023,[123] the stone building is significantly associated with the patterns of events that established and perpetuated the region's winemaking industry and its heritage during the 20th century. Under Antonio Forni, Lombarda Cellar's wine production thrived during a period when many vineyards in Napa County were destroyed by the phylloxera epidemic.[124] In 1940, after the end of the prohibition era, the winery was revived by new owners who rebranded the property as Freemark Abbey. During the 1960s and 1970s, under a new group of partners, Freemark Abbey was among a few select local wineries to be recognized at the 1976 Judgment of Paris, an event that brought lasting acclaim to Napa County and California as premier wine regions. **For these reasons, the stone building at 3022 SR 29 appears individually eligible at the local level for listing under Criterion A/1.** The period of significance is from 1899 (when Antonio Forni established Lombarda Cellar) to 1976 (when the Judgment of Paris occurred).

3010 SR 29, 3000 SR 29, and 1189 Lodi Lane

Archival research does not suggest that the restaurant at 3010 SR 29, the commercial building at 3000 SR 29 (P-28-002464), or the motel at 1189 Lodi Lane are associated with any local or regional events that made a significant contribution to broad patterns of history. The restaurant and commercial building were occupied by many short-lived businesses, and the motel historically functioned as temporary lodging. None of the buildings appear to be associated with specific events or a pattern of events or a trend related to the development of the region, state or nation. For these reasons, 3010 SR 29, 3000 SR 29, and 1189 Lodi Lane do not appear to be eligible under Criterion A/1.

Criterion B/2 (Persons)

Stone Building at 3022 SR 29

Tychson Cellar, the precursor to Lombarda Cellar and Freemark Abbey Winery, was established by Josephine Tychson, the first woman to build and operate a commercially producing winery in California. She sold the property in 1894, and the subsequent owner replaced the original redwood cellar with the extant stone winery building in 1899. While Tychson's story is certainly notable and important in winemaking and women's history, the stone building has never been directly associated with Josephine Tychson because it postdates her ownership of the property.

Antonio Forni established Lombarda Cellar and constructed the extant stone building in 1899 and continued to enlarge it. Forni died in 1908, and his direct association with the building is relatively brief. His relatives continued to operate Lombarda Cellar until 1925. Archival research does not indicate that Lombarda Cellar played a significant role in St. Helena's agricultural development.

The association of the stone winery building with Freemark Abbey Winery—particularly its existence under partners Charles Carpy, Laurie Wood, Brad Webb, Bill Jaeger, and John Bryan and limited partners Dick Heggie

[123] "Project Notes," *The Napa Wine Project,* accessed August 10, 2023, https://www.napawineproject.com/project-notes/.

[124] Draft National Register of Historic Places Registration Form for Lombarda Cellar (Freemark Abbey Winery), prepared by Napa County Landmarks, 2015, on file at Evans & De Shazo, Inc., (Sebastopol, CA), 12.

and Jim Warren beginning in the late 1960s—is a significant one. While the partners were undoubtedly knowledgeable about wine, investments, and marketing, the winemakers were arguably more important in establishing Freemark Abbey as a first-class winery. Prior to joining Freemark Abbey as a consultant in 1966 and as a partner in 1968, Brad Webb was the winemaker at Hanzell Vineyards in Sonoma during what the *Los Angeles Times* described as "one of the most important winery projects in California history."[125] At Hanzell Vineyards, he introduced several winemaking practices that revolutionized the industry: temperature-controlled fermentation, the use of French Oak barrels, "blanketing" young wines in tanks with inert gas, and inducing malolactic fermentation.[126] Webb is hailed as a "pioneer" among California winemakers and rose to prominence before joining Freemark Abbey.[127] For this reason, the stone building is not associated with Webb's productive life (i.e., the time period when he achieved significance). Conversely, two Freemark Abbey wines created by winemaker Jerry Luper were included in the 1976 Judgment of Paris, and both placed in the top 10 in the red and white categories. The Judgment of Paris was a momentous international event that brought renown to Napa County wineries, and Luper is recognized for his achievements during his time at Freemark Abbey. **For this reason, the stone building is significantly associated with the productive life of winemaker Jerry Luper and appears individually eligible at the local level for listing under Criterion B/2.** The period of significance is from 1970 to 1976, the years Luper was employed at Freemark Abbey Winery.

3010 SR 29, 3000 SR 29, and 1189 Lodi Lane

Archival research did not identify important individuals or groups that were significantly associated with the restaurant at 3010 SR 29, the commercial building at 3000 SR 29 (P-28-002464), or the motel at 1189 Lodi Lane. The restaurant and commercial building were occupied by many different businesses before sitting vacant after 2001 and 2013, respectively. The motel has historically served as temporary lodging for an untold number of people. Ownership of all three buildings has changed several times, and none of the owners appear to have been important individuals. For these reasons, 3010 SR 29, 3000 SR 29, and 1189 Lodi Lane do not appear to be eligible under Criterion B/2.

Criterion C/3 (Design/Construction)

Stone Building at 3022 SR 29

The stone building at 3022 SR 29 embodies the distinctive characteristics of late-19th and early 20th-century stone wineries in Napa County. It is a well-maintained example of stone commercial/industrial buildings that were constructed by skilled masons using locally quarried materials. The region's numerous stone buildings and structures (e.g., bridges) contribute significantly to Napa Valley's historic architectural character. According to architectural historian Stacey De Shazo,

> *Stone became a desirable material for use in the construction of commercial and industrial buildings in Napa Valley beginning in the 1870s. Sandstone and volcanic tufa were available from several local quarries and could be obtained in various colors, ranging from pinkish tan to gray, and were soft enough to shape into building blocks using hand axes. Italian, Scottish, Swiss, and English laborers participated in quarrying stone and constructing stone buildings throughout the Napa Valley. For winery owners, stone construction not only demonstrated their*

[125] Dan Berger, "Label Honors Consultant's Role in Developing California Chardonnay," *Los Angeles Times,* December 14, 1989, https://www.latimes.com/archives/la-xpm-1989-12-14-fo-30-story.html.

[126] "Hanzell Vineyards Wine," *Wine.com,* accessed August 10, 2023, https://www.wine.com/list/wine/hanzell/7155-8171#closePromoModal.

[127] "Brad Webb, Pioneer of California Chardonnay, Dies," *Wine Spectator,* November 30, 1999, https://www.winespectator.com/articles/brad-webb-pioneer-of-california-chardonnay-dies-8456.

> *faith in the permanence of their industry and represented prosperity, but it provided well-needed climate control and protection from fire or theft.*[128]

Consistent with previous evaluations of the stone building, ESA finds that the stone building possesses significance at the local level under National Register Criterion C. Additionally, the building appears individually eligible for listing at the local level on the California Register under Criterion 3. The period of significance is 1899–1908, the period during which time Antonio Forni operated Lombarda Cellar and Gaetano Rossi constructed the building in phases.

Commercial Building at 3000 SR 29 (P-28-002464)

The commercial building at 3000 SR 29 is a modest and altered example of Streamline Moderne-style architecture in Napa County. Its curved corners and glass block accents are certainly distinctive, but there are other examples of Streamline Moderne architecture in St. Helena and elsewhere in Napa County that exhibit higher concentrations of distinctive characteristics and are more intact than 3000 SR 29. Extant examples of commercial buildings include the El Bonita Motel at 195 Main Street in St. Helena (ca. 1940) and automobile service stations in Napa at 1509 Main Street (ca. late-1930s) and 1538 Third Street (ca. 1940). The St. Helena Post Office at 1461 Main Street is an intact example of a Streamline Moderne-style civic building, and 720 Franklin Street in Napa is an example of a contemporary apartment building. The original architect of the building is unknown, and it does not appear to be the work of a master or possess high artistic values. For these reasons, 3000 SR 29 does not appear to be individually eligible under Criterion C/3.

Restaurant Building at 3010 SR 29

Buildings constructed between ca. 1968 and ca. 1980 (the ambiguous period that overlaps with the end of Modernism and the beginning of Postmodernism) are often attributed to the Late Modern Style, whose characteristics have been described by one architecture critic as "beefy bold shapes, wrapped in singular materials, sticking their sharp corners in our faces. [It is m]ore refined than Brutalism, less picturesque than Postmodernism."[129] While the restaurant building embodies some characteristics of the Late Modern Style of architecture—such as its lack of direct historical references; bold, angular shapes and forms; and consistency of cladding materials on all sides of the buildings—it doesn't contain enough of those characteristics to be considered truly representative of the style or to possess high artistic values. The restaurant was designed by local architect Leslie Niemi who also designed a number of extant civic and institutional buildings in St. Helena. When considered among some of his other designs listed above, 3010 SR 29 appears to have been a minor commercial project. For these reasons, 3010 SR 29 does not appear to be individually eligible under Criterion C/3.

Motel at 1189 Lodi Lane

The building at 1189 Lodi Lane is an altered example of a mid-century motel constructed in phases and later conjoined. It does not embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic values. For these reasons, 1189 Lodi Lane does not appear to be individually eligible under Criterion C/3.

---

[128] Historic Preservation Certification Application Part 1 for Freemark Abbey/Lombarda Cellars, prepared by Evans & De Shazo on behalf of Jackson Family Investments III, LLC, 2015, 5, on file at Evans & De Shazo, Inc., (Sebastopol, CA).

[129] Alexandra Lange, "What is Late Modernism?" *Curbed,* January 5, 2017, accessed August 10, 2023, https://archive.curbed.com/2017/1/5/14165394/late-modernism-architecture-alexandra-lange.

Criterion D/4 (Potential to Yield Information)

Stone Building at 3022 SR 29

Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the building/structure/site/object itself is the principal source of important construction-related information. The stone winery building is among the late 19th- and early 20th-century stone buildings that characterize several communities in Napa County. Such buildings were typically designed and constructed by trained stonemasons, many of whom were of foreign birth. While there currently has been little comprehensive study of these construction methods in Napa County, traditional stone masonry methodologies from the 19th and early 20th centuries are well documented in Europe where the craftspeople originally learned their trade. There is no evidence to suggest that they adapted these techniques to any unique qualities of Napa Valley. It is therefore unlikely that this building will yield new information on masonry construction. The stone building at 3022 SR 29 does not appear to be individually eligible under Criterion D/4.

3010 SR 29, 3000 SR 29, and 1189 Lodi Lane

The other three subject buildings located within the project area were constructed using common materials and building techniques, and they do not appear to have the potential to provide important information related to materials or construction types. Therefore, the buildings at 3010 SR 29, 3000 SR 29 (P-28-002464), and 1189 Lodi Lane do not appear to be individually eligible under Criterion D/4.

Historic District Considerations

Based on the architectural descriptions provided above and documentation of the physical development of the project area, the four buildings located within the project area that meet the age-threshold for consideration as historic resources—3022 SR 29 (P-28-001848), 3010 SR 29, 3000 SR 29 (P-28-002464), and 1189 Lodi Lane—do not together form a historic district. They were constructed independently of one another over the course of nearly 75 years, and until recently, they had different property owners. No cohesive design or use unites the grouping of buildings. None of the buildings appear to be related in terms of architectural design, function, or historical development. As such, none of the subject buildings contribute to a potential historic district.

Character-Defining Features

Based on the evaluation above, the stone building at 3022 SR 29 (P-28-001848) possesses significance under multiple criteria. Under Criterion A/1, the period of significance is 1899–1976. Under Criterion B/2, the period of significance is 1970–76. Under Criterion C/3, the period of significance is 1899–1908. The character-defining features of the stone building include:

- Stone construction including ashlar and rough-cut masonry units;
- L-shaped building footprint;
- One- and two-story massing;
- Segmentally arched, stone doorways and window openings (but not the doors or wood-sash windows themselves);
- Rectangular, stone window openings (but not the wood-sash windows themselves);
- Stepped parapet on primary (southwest) façade with crenellations, scrollwork, and vertical ornamental elements;

- Stone and bronze plaques on southwest and northeast façades;
- Originally gabled roof forms (but not the roofing materials themselves);
- Original lumber structural elements (these are visible primarily on the interior of the lower floor); and
- Use for wine tasting and winery-related functions; and
- Low, stone fence/wall between the building and SR 29 (P-28-001215).[130]

The three other subject buildings located in the project area—3010 SR 29, 3000 SR 29 (P-28-002464), and 1189 Lodi Lane—are not recommended as eligible for listing under any National Register or California Register criteria. Therefore, they do not possess character-defining features, and a further assessment of integrity is not required.

Integrity

In order to qualify for listing in any local, state, or national historic register, a property must possess significance under one or more of the evaluative criteria described above and also retain sufficient integrity to convey its historical significance. As discussed above, the stone building (P-28-001848) appears to possess significance at the local level under Criteria A/1, B/2, and C/3. According to the National Park Service,

> *A property important for association with an event, historical pattern, or person(s) [i.e., Criteria A/1 or B/2] ideally might retain* some *features of all seven aspects of integrity […]. Integrity of design and workmanship, however, might not be as important to the significance, and would not be relevant if the property were a site. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today.*[131]

Additionally,

> *A property significant under Criterion [C/3] must retain those physical features that characterize the type, period, or method of construction that the property represents. Retention of design, workmanship, and materials will usually be more important than location, setting, feeling, and association. Location and setting will be important, however, for those properties whose design is a reflection of their immediate environment (such as designed landscapes and bridges).*[132]

The stone building occupies the site on which it was originally established, and it therefore **retains integrity of location**.

The character of the stone building has historically been defined by its setting relative to SR 29 and surrounded by vineyards and semi-rural residential properties. While new construction has occurred in the vicinity of the stone building since the 1970s, the site retains the key elements of the historic setting. For this reason, the stone building **retains integrity of setting**.

---

130 This fence/wall was constructed ca. 1870 and predates the stone building. It has remained a prominent site feature throughout the building's existence and is considered to contribute to the historic character of the winery. This is consistent with previous evaluations of the stone building (i.e., the 2015 draft Historic Preservation Certification Application Part 1 prepared by Evans & De Shazo and the 2015 draft National Register of Historic Places Registration Form prepared by Napa County Landmarks).

131 National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, 1997, 48, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf, accessed December 8, 2022.

132 Ibid.

The design of the stone building has been moderately changed. The building's L-shaped footprint, massing, scale, exterior stone structure and ornamentation, and vernacular architectural style have been retained; however, the interior spatial layout has been largely reconfigured to accommodate the many occupants and uses over time. Regarding materials, the building has been extensively renovated. This is equally apparent on the exterior as the interior. The roof has been completely reconfigured and all windows and doors have been replaced, but the original stone walls have been protected, reinforced, and fully retained. On the interior, the spatial layout has been largely reconfigured and finishes have been replaced or resurfaced (except for the stone walls). While changes to the building's design and materials appear to be extensive, the vast majority of the building's character-defining features have been retained. Therefore, the stone building **retains integrity of design and materials.** Furthermore, there is evidence of original stonemasons' labor and skill in the vernacular construction and fine detailing of the building's exterior stone walls, and the stone building **retains integrity of workmanship**.

The stone building is associated with the patterns of events that established and perpetuated the region's winemaking industry and its heritage during the 20th century (Criterion A/1) and also with the productive life of winemaker Jerry Luper whose two Freemark Abbey wines ranked among the top California wines entered in the 1976 Judgment of Paris, an event that put Napa County on the map as a world-class wine region and destination (Criterion B/2). To use the "basic integrity test" presented above, it is highly probable that a historical contemporary would recognize the stone building as it exists today, renovations and all. Because "it *is* the place where the […] activity occurred and is sufficiently intact convey that relationship to an observer,"[133] the stone building **retains integrity of association**.

Lastly, the stone building embodies the "physical features that, taken together, convey the property's historic character" as a one- and two-story building constructed of stone masonry that has historically operated (either in full or in part) as part of a commercial winery.[134] As such, the stone building **retains integrity of feeling**.

Overall, the stone building at 3022 SR 29 (P-28-001848) retains a high degree of integrity.

Conclusion

Based on archival research and analysis, ESA recommends the stone building at 3022 SR 29 (P-28-001848) as individually eligible at the local level for listing on the National Register and California Register under multiple criteria. Under Criterion A/1, the building is associated with the patterns of events that established and perpetuated the region's winemaking industry and its heritage during the 20th century, and the period of significance is from 1899 (when Antonio Forni established Lombarda Cellar) to 1976 (when the Judgment of Paris occurred). Under Criterion B/2, the building is significantly associated with the productive life of winemaker Jerry Luper whose two Freemark Abbey wines ranked among the top California wines entered in the 1976 Judgment of Paris, an event that put Napa County on the map as a world-class wine region and destination. The period of significance is from 1970 to 1976 (the years he worked at Freemark Abbey). Under Criterion C/3, the building embodies the distinctive characteristics of late-19th and early 20th-century stone wineries in Napa County. The period of significance for Criterion C/3 is 1899–1908, the period during which time Antonio Forni operated Lombarda Cellar and Gaetano Rossi constructed the building in phases. Additionally, the stone building retains sufficient integrity to convey its historic significance under all three criteria. Therefore, the stone building

[133] Ibid., 45.
[134] Ibid.

at 3022 SR 29 (P-28-001848) would be considered a historic property for the purposes of NHPA Section 106 and a historical resource for the purposes of CEQA.

The other three buildings located in the project area—3010 SR 29, 3000 SR 29 (P-28-002464), and 1189 Lodi Lane—are not recommended as eligible for listing under any National Register or California Register criteria. Therefore, they would not be considered historical resources for the purposes of CEQA.

Sources

"The 10 Greatest Vineyards." *Wine Spectator,* December 1985.

"Antonio Forni Laid to Rest." *St. Helena Star,* August 28, 1908.

Beck, Warren A. and Ynez D. Haase. *Historical Atlas of California.* Norman, OK: University of Oklahoma Press, 1974.

Berger, Dan. "Label Honors Consultant's Role in Developing California Chardonnay." *Los Angeles Times,* December 14, 1989. https://www.latimes.com/archives/la-xpm-1989-12-14-fo-30-story.html.

"Brad Webb, Pioneer of California Chardonnay, Dies." *Wine Spectator,* November 30, 1999. https://www.winespectator.com/articles/brad-webb-pioneer-of-california-chardonnay-dies-8456.

Brown, Mary. *San Francisco Modern Architecture and Landscape Design, 1935-1970, Historic Context Statement.* Prepared for the San Francisco Planning Department, 2010.

Building permit records for APNs 022-130-020-000, 022-130-021-000, and 022-220-028-000. On file at the Napa County Planning, Building, and Environmental Services Department.

California State Office of Historic Preservation. "California Historical Resource Status Codes." March 1, 2020. https://ohp.parks.ca.gov/pages/1068/files/Resource-Status-Codes.pdf.

-----. "Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historic Resources Inventory Directory." November 2004. https://ohp.parks.ca.gov/pages/1069/files/tab8.pdf.

Caltrans. DPR 523 form-set for 3000 St. Helena Highway North (P-28-002464). May 2000. On file at the Northwest Information Center.

-----. DPR 523 form-set for Freemark Abbey Winery, 3022 St. Helena Highway North (P-28-001848). May 2000. On file at the Northwest Information Center.

Courtney, Kevin. "Ambitious Expansion for St. Helena Library." *Napa Valley Register,* January 19, 1989.

-----. "Napa Valley Wine Leader Chuck Carpy Dies at Age 68." *Napa Valley Register,* August 8, 1996.

Crain, Amy (State Historian II, California State Office of Historic Preservation). Email to Johanna Kahn (Senior Architectural Historian, ESA). July 21, 2023.

Cunningham, Alta (Architectural Historian, Ascent Environmental). *Peer Review of the Cultural Resources Study for the Inn at the Abbey Project (February 2019).* Prepared for Trevor Hawkes (Planner, Napa County), September 8, 2020.

"Death Wins in Stepsons' Race to St. Helena." *Napa Valley Register*, January 28, 1933.

"Design Accepted." *St. Helena Star,* June 16, 1977.

Dunn, Bernice. "Robert Louis Stevenson Museum at St. Helena Will Open Dec. 14." *Napa Valley Register,* December 6, 1969.

Environmental Science Associates. *San Jose-Santa Clara Regional Wastewater Facility Streamline Moderne Industrial Historic District.* Prepared for the San Jose-Santa Clara Regional Wastewater Facility, 2016.

Ephemera folder for Freemark Abbey Winery. On file at the Napa County Historical Society.

Evans & De Shazo, Inc. *Current Condition Assessment and Secretary of the Interior's Standards Review for the 1903 Forni House, Located at 1551 Oak Avenue, St. Helena, Napa County, California.* Prepared for Desmond Land Use Consulting, May 31, 2018.

-----. Historic Preservation Certification Application Part 1 for Freemark Abbey/Lombarda Cellars. Prepared on behalf of Jackson Family Investments III, LLC. 2015. On file at Evans & De Shazo, Inc., (Sebastopol, CA).

Gudgel, Mark. *The Rise of Napa Valley Wineries: How the Judgment of Paris Put California Wine on the Map.* Charleston, SC: American Palate, A Division of The History Press, 2023.

"Half Way Inn to Have Hospitable Opening." *St. Helena Star,* November 23, 1961.

"Hanzell Vineyards Wine." *Wine.com.* Accessed August 10, 2023, https://www.wine.com/list/wine/hanzell/7155-8171#closePromoModal.

Heald, Eleanor and Ray Heald. "Freemark Abbey: Focuses on Cabernet." *PWV,* September/October 1993.

Heintz, William F. *Freemark Abbey Winery of Tychson Hill, St. Helena, California.* Glen Ellen, California: Research of Glen Ellen, 1975.

-----. "Wineries of Uncertain Vintage." *San Francisco Chronicle,* December 3, 1978.

"Helen M. Niemi" (obituary). *Napa Valley Register,* October 28, 1988.

"History." *Freemark Abbey.* Accessed August 10, 2023, https://www.freemarkabbey.com/history.

"History – The Property." *Inn at the Abbey.* Accessed August 1, 2023, https://www.innattheabbey.com/history-property.

Hoover, Mildred Brooke, Hero Eugene Rensch, Ethel Rensch, and William N. Abeloe. *Historic Spots in California.* Fourth edition. Revised by Douglas E. Kyle. Stanford, CA: Stanford University Press, 2002.

"Jerry Luper and the University of Freemark Abbey." *Freemark Abbey.* Accessed August 10, 2023, https://www.freemarkabbey.com/blog/freemark-abbey-legacy/jerry-luper-and-university-freemark-abbey.

JRP Historical Consulting. *Historical Resources Evaluation Report for the Vine Trail: St. Helena to Calistoga, Napa County, California.* Prepared for Napa Valley Transportation Authority, May 2020.

Lange, Alexandra. "What is Late Modernism?" *Curbed.* January 5, 2017. Accessed August 10, 2023, https://archive.curbed.com/2017/1/5/14165394/late-modernism-architecture-alexandra-lange.

Lapsley, James T. *Bottled Poetry: Napa Winemaking from Prohibition to the Modern Era.* Berkeley, CA: University of California Press, 1997.

"Leslie Niemi Opens Adam St. Office." *St. Helena Star,* September 6, 1962.

"Mrs. Josephine Tychson, Pioneer Resident, Passes Away." *St. Helena Star,* December 22, 1939.

Napa County Historic Resources Survey. DPR form-set for Freemark Abbey Winery, 3022 St. Helena Highway North (P-28-001848). August 1978. On file at the Northwest Information Center.

Napa County Landmarks. Draft National Register of Historic Places Registration Form for Lombarda Cellar (Freemark Abbey Winery). 2015. On file at Evans & De Shazo, Inc., (Sebastopol, CA).

Napa Valley Wine Museum and Lin Weber. *Images of America: Napa Valley Wine Country.* Charleston, SC: Arcadia Publishing, 2004.

National Park Service. *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation.* 1997. https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

"New Buildings and Remodelings." *Napa Valley Register,* March 31, 1973.

ParcelQuest. Accessed August 9, 2023, www.parcelquest.com.

"Pioneer is Summoned." *St. Helena Star*, February 3, 1933.

Prchal, Dolly. "Josephine Marlin Tychson: The First Woman Winemaker in California." *Gleanings: Napa County Historical Society* 3, no. 4 (December, 1986): 1–5. On file at Napa County Historical Society.

"Project Notes." *The Napa Wine Project.* Accessed August 10, 2023, https://www.napawineproject.com/project-notes/.

"Site Selected for 'Showhouse 1984.'" *Napa Valley Register,* May 4, 1984.

"Sold." *St. Helena Star,* July 26, 1940.

"St. Helena Church: Methodist Annex Finished." *Napa Valley Register,* November 19, 1976.

"St. Helena's Future Bank." *Napa Valley Register,* February 16, 1976.

Stanley, Anne. "Valley Winery Celebrates 100-year Birthday Tuesday." *Napa Valley Register,* November 1, 1986.

"Story of Architects." *St. Helena Star,* June 15, 1961.

Sullivan, Charles L. *Napa Wine: A History.* San Francisco: The Wine Appreciation Guild, Ltd., 1994.

"The Vineyards and Wineries." *St. Helena Star,* October 19, 1906.

"The Wine Garden Opens." *St. Helena Star,* November 8, 1973.

"Winery 50 Years Old Is Sold By St. Helena Owner." *Sacramento Bee,* July 27, 1940.

Appendix F
Fuel Use Calculations

The Inn at the Abbey Project

Energy Calculations - Construction

Source	MT of CO_2
Total CO_2 from Diesel use	947.2
Total CO_2 from Gasoline Use	141.0
Onsite CO_2 from diesel use	200.3
Offsite CO_2 from diesel use	746.9
Percent onsite diesel	21.1%
Percent onroad diesel	78.9%

CO_2 from diesel fuel combustion[a] = 10.2 kg of CO_2/gallon of diesel

CO_2 from gasoline fuel combustion[a] = 8.78 kg of CO_2/gallon of gasoline

[a] Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels)

Conversion 1 MT = 1000 kg

Source	Fuel Use (gallons)	Average per year (over 3 years)
Onsite Diesel	19,616	6,539
Offsite Diesel	73,153	24,384
Total Diesel	92,769	30,923
Offsite Gasoline	16,064	5,355

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Napa
Calendar Year: 2028
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	Fuel Consumption
Napa	2028	HHDT	Aggregate	Aggregate	Gasoline	0.350527005	10122.51081	10122.51081	0	2293.363591	0	26.04979336	0	0.133176119	26.18296948	2.760961417
Napa	2028	HHDT	Aggregate	Aggregate	Diesel	1067.20598	33470721.83	33470721.83	0	4528129.928	0	57363.16001	3648.269801	0	61011.42981	5450.126856
Napa	2028	HHDT	Aggregate	Aggregate	Electricity	32.27370055	987387.8109	0	987387.8109	119875.6413	1828081.838	0	0	0	0	0
Napa	2028	HHDT	Aggregate	Aggregate	Natural Gas	85.43128805	1624131.229	1624131.229	0	247557.6299	0	2362.986807	310.0630178	0	2673.049825	308.9637904
Napa	2028	LDA	Aggregate	Aggregate	Gasoline	40873.72001	602566099.9	602566099.9	0	65329093.67	0	167115.4671	0	4693.703712	171809.1708	18117.06239
Napa	2028	LDA	Aggregate	Aggregate	Diesel	157.1902364	1615842.911	1615842.911	0	225612.705	0	400.6385482	0	0	400.6385482	35.78888281
Napa	2028	LDA	Aggregate	Aggregate	Electricity	3329.026614	56512977.37	0	56512977.37	5633755.989	21818673.53	0	0	0	0	0
Napa	2028	LDA	Aggregate	Aggregate	Plug-in Hybrid	1440.881811	24678497.75	11285060.89	13393436.86	2067442.063	4045217.119	3443.756021	0	140.7324945	3584.488515	377.9798352
Napa	2028	LDT1	Aggregate	Aggregate	Gasoline	4215.754426	49919865.01	49919865.01	0	6274089.31	0	17107.56239	0	585.6876811	17693.25007	1865.731113
Napa	2028	LDT1	Aggregate	Aggregate	Diesel	0.660350706	2182.59776	2182.59776	0	634.2759943	0	0.906293035	0	0	0.906293035	0.080958798
Napa	2028	LDT1	Aggregate	Aggregate	Electricity	18.19791213	301795.5376	0	301795.5376	30378.74165	116517.9861	0	0	0	0	0
Napa	2028	LDT1	Aggregate	Aggregate	Plug-in Hybrid	12.27058349	217600.2478	91098.75608	126501.4917	17606.38536	38207.22084	27.8129353	0	1.273278336	29.08621364	3.067104886
Napa	2028	LDT2	Aggregate	Aggregate	Gasoline	21139.19419	297396478.3	297396478.3	0	33756187.59	0	103120.031	0	3046.296947	106166.3279	11195.10663
Napa	2028	LDT2	Aggregate	Aggregate	Diesel	107.8354768	1496318.154	1496318.154	0	171913.3438	0	490.7745132	0	0	490.7745132	43.84069286
Napa	2028	LDT2	Aggregate	Aggregate	Electricity	228.3390574	2929512.962	0	2929512.962	397456.3943	1131033.789	0	0	0	0	0
Napa	2028	LDT2	Aggregate	Aggregate	Plug-in Hybrid	230.5561238	3879173.749	1700622.457	2178551.292	330812.3014	657987.4215	519.0637689	0	26.15548884	545.2192577	57.49268949
Napa	2028	LHDT1	Aggregate	Aggregate	Gasoline	2066.321094	24661575.68	24661575.68	0	10066729.49	0	23569.58389	88.3462752	285.888646	23943.81881	2524.845776
Napa	2028	LHDT1	Aggregate	Aggregate	Diesel	1864.986839	21506283.1	21506283.1	0	7671154.57	0	15162.88483	89.96775803	0	15252.85259	1362.531279
Napa	2028	LHDT1	Aggregate	Aggregate	Electricity	58.98798171	1310596.256	0	1310596.256	270097.7128	858450.6644	0	0	0	0	0
Napa	2028	LHDT2	Aggregate	Aggregate	Gasoline	248.5476378	2917479.082	2917479.082	0	1210877.556	0	3164.374824	12.27625876	33.89090083	3210.541984	338.5476407
Napa	2028	LHDT2	Aggregate	Aggregate	Diesel	747.6485845	8898929.447	8898929.447	0	3075264.519	0	7523.569617	57.29543383	0	7580.865051	677.195672
Napa	2028	LHDT2	Aggregate	Aggregate	Electricity	14.95368437	317293.709	0	317293.709	64859.53733	204672.206	0	0	0	0	0
Napa	2028	MCY	Aggregate	Aggregate	Gasoline	2478.316476	4788299.509	4788299.509	0	1719951.634	0	988.8514566	0	97.86237992	1086.713837	114.5926162
Napa	2028	MDV	Aggregate	Aggregate	Gasoline	14138.18605	181733698.9	181733698.9	0	22055413.96	0	77631.82365	0	2490.990869	80122.81452	8448.85068
Napa	2028	MDV	Aggregate	Aggregate	Diesel	300.7980922	3804738.723	3804738.723	0	470214.8835	0	1667.408789	0	0	1667.408789	148.9489666
Napa	2028	MDV	Aggregate	Aggregate	Electricity	237.5772935	3040520.686	0	3040520.686	413252.8746	1173891.933	0	0	0	0	0
Napa	2028	MDV	Aggregate	Aggregate	Plug-in Hybrid	153.1032366	2513363.32	1118850.607	1394512.712	219679.4135	421184.4023	341.481165	0	21.5495956	363.0307606	38.28114011
Napa	2028	MH	Aggregate	Aggregate	Gasoline	249.8737022	768132.8993	768132.8993	0	8174.138409	0	1647.700764	0	0.27911499	1647.979879	173.7774191
Napa	2028	MH	Aggregate	Aggregate	Diesel	135.8848269	412446.6847	412446.6847	0	4443.43384	0	491.8531581	0	0	491.8531581	43.93704778
Napa	2028	MHDT	Aggregate	Aggregate	Gasoline	115.1759691	2049877.458	2049877.458	0	753552.1382	0	3895.219164	21.86705182	38.63263537	3955.718851	417.1256103
Napa	2028	MHDT	Aggregate	Aggregate	Diesel	1387.245297	17217760.13	17217760.13	0	4917071.013	0	21283.53685	1070.157169	0	22353.69402	1996.846632
Napa	2028	MHDT	Aggregate	Aggregate	Electricity	49.69083818	816880.3436	0	816880.3436	184672.5834	888190.5468	0	0	0	0	0
Napa	2028	MHDT	Aggregate	Aggregate	Natural Gas	17.25385581	234153.23	234153.23	0	50382.13613	0	247.3202382	31.31545482	0	278.635693	32.20603636
Napa	2028	OBUS	Aggregate	Aggregate	Gasoline	71.4217516	1220654.152	1220654.152	0	467285.0948	0	2356.715891	9.682992029	15.76859312	2382.167476	251.1965839
Napa	2028	OBUS	Aggregate	Aggregate	Diesel	78.40941672	1549145.639	1549145.639	0	268422.1176	0	2248.514143	62.01994083	0	2310.534084	206.3990944
Napa	2028	OBUS	Aggregate	Aggregate	Electricity	0.645945831	21724.47601	0	21724.47601	4226.175529	24067.39541	0	0	0	0	0
Napa	2028	OBUS	Aggregate	Aggregate	Natural Gas	0.61413006	12041.0377	12041.0377	0	1596.001199	0	12.67384036	0.237532709	0	12.91137307	1.492357803
Napa	2028	SBUS	Aggregate	Aggregate	Gasoline	10.73882168	222864.3449	222864.3449	0	14046.37876	0	195.9893847	9.89894177	0.849550198	206.7378767	21.80025079
Napa	2028	SBUS	Aggregate	Aggregate	Diesel	100.2413659	720996.0024	720996.0024	0	474638.8581	0	904.143244	81.77021544	0	985.9134594	88.07125878
Napa	2028	SBUS	Aggregate	Aggregate	Electricity	2.192289345	21985.59151	0	21985.59151	9302.006576	23160.84428	0	0	0	0	0
Napa	2028	SBUS	Aggregate	Aggregate	Natural Gas	5.137023524	39719.91552	39719.91552	0	24323.6009	0	54.98517821	7.484499358	0	62.46967757	7.220541941
Napa	2028	UBUS	Aggregate	Aggregate	Gasoline	32.10590206	678571.5328	678571.5328	0	41994.5199	0	943.5919861	0	2.96452713	946.5565132	99.81320162
Napa	2028	UBUS	Aggregate	Aggregate	Diesel	19.81473561	991712.5985	991712.5985	0	25917.67418	0	1245.652525	0	0	1245.652525	111.2736466
Napa	2028	UBUS	Aggregate	Aggregate	Electricity	3.840996925	187101.606	0	187101.606	5024.023978	326163.7743	0	0	0	0	0
Napa	2028	UBUS	Aggregate	Aggregate	Natural Gas	4.335785081	188536.6245	188536.6245	0	5671.206885	0	215.676825	0	0	215.676825	24.92895147
							1360455791									

Countywide

Fuel	Fuel Use		Miles per year	
	1000 gallons per year	kWh per year	VMT	eVMT
Gasoline	43571	0	1168933719	0
Diesel	10165	0	91687078	0
Natural Gas	375	0	2098582	0
Electricity	0	28392905	0	66447776
Plug-in Hybrid	477	5162596	14195633	17093002

Total County-wide VMT	1,360,455,791	miles per year
Gasoline	44,048	1000 gallons per year
Electricity	33,555,501	kWh per year
Diesel	10,165	1000 gallons per year
Natural Gas (DGE)	375	1000 gallons per year

Project VMT	2,776,464	miles per year		
Gasoline	90	1000 gallons per year	89,895	gallons per year
Electricity	68,481	kWh per year	68	Mwh per year
Diesel	21	1000 gallons per year	20,745	gallons per year
Natural Gas [1]	98,284	Btu	0.10	MMBtu

1. EMFAC2021 includes compressed natural gas in terms of diesel gallon equivalents. This is converted into Btu per the U.S. Department of Energy Alternative Fuel Data Center conversion: 1 DGE of CNG = 128,488 Btu. Available at: https://afdc.energy.gov/fuels/equivalency_methodology.html.

Operational Building Energy Use

From CalEEMod operational output,

Land Use	Electricity	Natural Gas	Electricity Use equivalent to Natural Gas Use
	kWh/yr	kBTU/yr	kWh/yr
Hotel	503,490	2,273,674	666,376
Parking Lot	10,532	0	0
Enclosed Parking Sructure	75,631	0	0
Total	589,653	2,273,674	666,376

Total Operational Electricity Use =	1,256,029	kWh/yr
	1,256	MWh/yr

1 kWh =	3412	BTU
1 BTU =	0.000293083	kWh

Operational Building Energy Use Summary

	Electricity	Natural Gas
	kWh/yr	kBTU/yr
Unmitigated	589,653	2,273,674
Mitigated with MM GHG-1	1,256,029	0

Appendix G

Preliminary Stormwater Control Plan

STORMWATER CONTROL PLAN FOR A REGULATED PROJECT

For

The Inn at the Abbey
3022 St. Helena Highway
St. Helena, CA 94574

Prepared for:

Jackson Family Investments
1000 Alexander Mountain Road
Geyserville, CA 95441

#4111050.2

February 2020

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252.4966.f

TABLE OF CONTENTS

I. Project Data 1

II. Setting 1

II.A. Project Location and Description 1

II.B. Existing Site Features and Conditions 1

II.C. Opportunities and Constraints for Stormwater Control 1

III. Low Impact Development Design Strategies 2

III.A. Optimization of Site Layout 2

III.A.1. Limitation of development envelope 2

III.A.2. Preservation of natural drainage features 2

III.A.3. Setbacks from creeks, wetlands, and riparian habitats 2

III.A.4. Minimization of imperviousness 2

III.A.5. Use of drainage as a design element 2

III.B. Use of Permeable Pavements 2

III.C. Dispersal of Runoff to Pervious Areas 2

III.D. Stormwater Control Measures 2

IV. Documentation of Drainage 3

IV.A. Drainage Management Area Descriptions 3

IV.B. Tabulation and Sizing Calculations 4

V. Source Control Measures 8

V.A. Site activities and potential sources of pollutants 8

V.B. Features, Materials, and Methods of Construction of Source Control BMPs 11

VI. Stormwater Facility Maintenance 11

VI.A. Ownership and Responsibility for Maintenance in Perpetuity 11

VI.B. Requirements for Each Stormwater Facility 12

V. Certifications 12

TABLES

Table 1. Project Data

Table 2. Drainage Management Areas

Table 3. Bioretention Facility Design

Table 4. Self-treating Areas

Table 5. Self-retaining Areas

Table 6. Vegetated Buffer Strips

Table 7. Areas Draining to Self-Retaining Areas

Table 8. Areas Draining to Bioretention Facilities

Table 9. Areas Draining to Vegetated Buffer Strips

Table 10. Sources and Source Control Measures

Table 11. Construction Plan C3 Checklist

ATTACHMENTS

1. FIRMETTE, SOILS MAP
2. BIORETENTION CROSS-SECTION, BIORETENTION CONSTRUCTION CHECKLIST
3. DRAINAGE MANAGEMENT AREAS EXHIBIT

I. Project Data

Table 1. Project Data Form

Project Name/Number	Freemark Abbey/4111050.2
Application Submittal Date	June 2018
Project Location	3022 St. Helena Highway, St. Helena, CA 94574
Project Phase No.	N/A
Project Type and Description	Construction of new hotel and resort complex, with retail, restaurant, associated parking and infrastructure
Total Project Site Area (acres)	6.9 acres
Total New and Replaced Impervious Surface Area	144,515 s.f.
Total Pre-Project Impervious Surface Area	200,000 s.f.
Total Post-Project Impervious Surface Area	241,960 s.f.

II. Setting

II.A. Project Location and Description

Jackson Family Investments is seeking a Use Permit for a hotel on the adjacent corners of Highway 29 and Lodi Lane in Saint Helena, California. The site of the proposed hotel development is comprised of five parcels. The parcels to the north of Lodi Lane total 10.30 +/- acres and include APNs 022-130-023, 024, 027, and 028. These will be referred to as the north parcel. The 3.49 acre parcel to the south of Lodi Lane is APN 022-220-028. This will be referred to as the south parcel.

II.B. Existing Site Features and Conditions

The north parcel currently contains an existing stone building, winery, cottage, maintenance building, office, restaurant, and several outbuildings clustered to the north and west sides of the parcel. The southeast portion of the site is planted vineyards. The south parcel currently contains a motel and retail building accessed from Lodi Lane, and a residence accessed from York Lane.

The site slopes generally to the southeast with slopes ranging from 1-15%. Runoff from the project site flows via roof gutters and surface flow to on-site storm drains and natural flow lines, which ultimately discharge to the Napa River. The entire project site is outside the Napa River Flood Zone, see Firmette in Attachment 1.

II.C. Opportunities and Constraints for Stormwater Control

Stormwater treatment facilities have been integrated into the planning, design, construction, operation, and maintenance of the proposed development. The following potential opportunities and constraints were considered in determining the best stormwater control design for this development.

Opportunities for the site include topography to slope to bioretention basins, and existing vineyard area.

Constraints include the location next to a highway and multiple zoning types. The predominant soil group on the site is Perkins gravelly loam, see Soils Map in Attachment 1.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

The proposed hotel has underground parking to reduce the development envelope.

III.A.2. Preservation of natural drainage features

Treated Stormwater from the north parcel will discharge to existing on-site storm drains. Treated stormwater from the south parcel will discharge to natural vegetated flow lines.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

No creek, wetland, or riparian habitat setbacks impact the site. See Firmette in Attachment 1.

III.A.4. Minimization of imperviousness

Walkways and parking areas are designed to the minimum widths necessary without compromising public safety and a walkable environment. Landscaped areas are used instead of decorative impervious areas. Existing trees will be preserved to the maximum extent practicable.

III.A.5. Use of drainage as a design element

Bioretention Basins and Self-Retaining Areas will be integrated into the design as landscaping and decorative elements.

III.B. Use of Permeable Pavements

Permeable pavements are not in the scope of this project.

III.C. Dispersal of Runoff to Pervious Areas

Stormwater runoff will be directed to landscaped areas to the maximum extent practicable.

III.D. Stormwater Control Measures

Bioretention Facilities and Self-Retaining Areas have been incorporated into the design as Stormwater control measures. Refer to Attachment 2 for Bioretention Facility Cross-Section, Bioretention Construction Inspection Checklist.

IV. Documentation of Drainage

Table 2. Table of Drainage Management Areas

DMA Name	Impervious Area (sf)	Pervious Area (sf)	Total Area (sf)
DMA-1	59,960	1,580	61,540
DMA-2	33,500	2,700	36,200
DMA-3	9,400	1,990	11,390
DMA-5	8,060	2,150	10,210
DMA-6	7,590	0	7,590
DMA-7	2,440	1,250	3,690
DMA-8	9,910	0	9,910
DMA-9	3,405	755	4,160
DMA-10	2,765	1,020	3,785
DMA-11	0	2,260	2,260
DMA-12	995	370	1,365
DMA-13	3,490	1,670	5,160
DMA-14	3,000	300	3,300

IV.A. Drainage Management Area Descriptions

DMA 1 through 3 consist of the proposed hotel development on the north parcel.

DMA 1 drains the roof of the north hotel building, parking area F north of the north hotel building, and the driveway west of the north hotel building. DMA 1 drains via roof gutters, surface flow, and storm drains, to Bioretention Basin 1.

DMA 2 drains parking area C south of the north hotel building. DMA 2 drains via surface flow, curb gutters, and storm drains to Bioretention Basin 2.

DMA 3 drains the northern portion of parking area B, east of the north hotel building. DMA 3 drains to Self-Treating Area 3. SRA 3 is a portion of the vineyard to the southeast, where runoff infiltrates into the soil.

DMA 5 through DMA 11 consist of the proposed hotel development on the south parcel.

DMA 5 drains the driveway and parking area H at Lodi Lane. DMA 5 drains through sheet flow and valley gutters to Bioretention Basin 5.

DMA 6 drains the roof of the south hotel main building. DMA 6 drains via roof gutters and stormdrains to Bioretention Basin 6.

DMA 7 drains the internal courtyard south of the south main hotel building. DMA 7 drains via surface flow and rainwater collection, to Self-Retaining Area 7, a sunken landscaped portion of the courtyard.

DMA 8 drains the pool area, yoga studio, and south hotel barn building. DMA 8 drains to Bioretention Basin 8, which is built into a narrow-vegetated strip that wraps around the east and south edges of the DMA.

DMA 9 drains the roof and associated walkways and landscaping of south bungalow 1 of DMA 7. DMA 9 drains via roof drains and surface flow to Bioretention Basin 9.

DMA 10 drains the roof and associated walkways and landscaping of south bungalow 2. DMA 10 drains to Bioretention Basin 10.

DMA 11 drains the southeastern landscape area. DMA 11 is a self-treating area.

DMA 12 through 14 consist of additional parking improvements on the north parcel.

DMA 12 drains the southern portion of parking area E, adjacent to the maintenance building, to Bio-Retention Basin 12.

DMA 13 drains the northern portion of parking area E, east of the winery building. DMA 13 drains to Bioretention Basin 13.

DMA 14 parking area G, north of the stone building. DMA 14 drains to Bioretention Basin 14.

IV.B. Tabulation and Sizing Calculations

Table 3. Information Summary for Bioretention Facility Design

DMA	Total Project Area Impervious (Square feet)	Total Project Area Pervious (Square Feet)
DMA 1	59,960	1,580
DMA-2	33,500	2,700
DMA-5	8,060	2,150
DMA-6	7,590	0
DMA-8	9,910	0
DMA-9	3,405	755
DMA-10	2,765	1,020
DMA-12	995	370
DMA-13	3,490	1,670
DMA-14	3,000	300

Table 4. Self-Treating Areas

DMA Name	Total Project Area Impervious (Square feet)	Total Project Area Pervious (Square Feet)
DMA-11	0	2,260

Table 5. Self-Retaining Areas

DMA Name	Total Project Area Pervious (Square Feet)
DMA-3	19,198
DMA-7	1,460

Table 6. Vegetated Buffer Strips

There are no Vegetated Buffer Strips treating stormwater runoff as part of this project.

Table 7. Areas Draining to Self-Retaining Areas

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	Product (Area x runoff factor)[A]	Receiving self-retaining DMA	Receiving self-retaining DMA Area (square feet) [B]	Ratio [A]/[B]
$DMA\text{-}3_{imp}$	9,400	Impervious	1.0	9,400	SRA-3	19,198	0.49
$DMA\text{-}3_{perv}$	1,990	Pervious	0.1	199	SRA-3	19,198	0.01
$DMA\text{-}7_{imp}$	2,440	Impervious	1.0	2,440	SRA-7	1,460	1.67
$DMA\text{-}7_{perv}$	1,250	Pervious	0.1	125	SRA-7	1,460	0.09

Table 8. Areas Draining to Bioretention Facilities

DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 1		
$DMA\text{-}1_{perv}$	1,510	Pervious	0.10	151	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}1_{imp}$	59,960	Impervious	1	59,960			
Total>				60,111	0.04	2,405	2,720
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 2		
$DMA\text{-}2_{perv}$	2,700	Pervious	0.10	270	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}2_{imp}$	33,500	Impervious	1	33,500			
Total>				33,770	0.04	1,350	1,820
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 5		
$DMA\text{-}5_{perv}$	2,150	Pervious	0.10	215	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}5_{imp}$	8,060	Impervious	1	8,060			
Total>				8,275	0.04	331	650
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 6		
$DMA\text{-}6_{perv}$	0	Pervious	0.10	0	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}6_{imp}$	7,590	Impervious	1	7,590			
Total>				7,590	0.04	304	350

DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 8		
DMA-8$_{perv}$	0	Pervious	0.10	0	Sizing Factor	Minimum Facility size	Proposed Facility Size
DMA-8$_{imp}$	9,910	Impervious	1	9,910			
Total>				9,910	0.04	397	714
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 9		
DMA-9$_{perv}$	755	Pervious	0.10	76	Sizing Factor	Minimum Facility size	Proposed Facility Size
DMA-9$_{imp}$	3,405	Impervious	1	3,405			
Total>				3,481	0.04	140	166
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 10		
DMA-10$_{perv}$	1020	Pervious	0.10	102	Sizing Factor	Minimum Facility size	Proposed Facility Size
DMA-10$_{imp}$	2,765	Impervious	1	2,765			
Total>				2,867	0.04	115	198
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 13		
DMA-12$_{perv}$	370	Pervious	0.10	37	Sizing Factor	Minimum Facility size	Proposed Facility Size
DMA-12$_{imp}$	995	Impervious	1	995			
Total>				1,032	0.04	42	45

DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 13		
$DMA\text{-}13_{perv}$	1,670	Pervious	0.10	167	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}13_{imp}$	3,490	Impervious	1	3,490			
Total>				3,657	0.04	147	540
DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Facility 14		
$DMA\text{-}14_{perv}$	300	Pervious	0.10	30	Sizing Factor	Minimum Facility size	Proposed Facility Size
$DMA\text{-}14_{imp}$	3,000	Impervious	1	3,000			
Total>				3,030	0.04	122	200

Drainage Management Areas 3 & 4 utilize overland flow through a Self-Retaining Area (SRA) for stormwater treatment.

Table 9. Areas Draining to Vegetated Buffer Strips

There are no areas draining to vegetated buffer strips.

V. Source Control Measures

V.A. Site activities and potential sources of pollutants

The site activities and potential sources of pollutants for the Freemark Abbey project are listed in Table 10, below.

Table 10. Sources and Source Control Measures.

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
A. On-site storm drain inlets (unauthorized non-stormwater discharges and accidental spills or leaks)	• Mark all inlets with the words "No Dumping! Flows to River" or similar.	• Maintain and periodically repaint or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators.

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
		• See applicable operational BMPs in Fact Sheet SC-74, "Drainage System Maintenance." • Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
B. Interior floor drains	• Interior floor drains will be plumbed to the sanitary sewer.	• Inspect and maintain drains to prevent blockages and overflow.
C. Interior parking garages	• Interior floor drains will be plumbed to the sanitary sewer.	• Inspect and maintain drains to prevent blockages and overflow.
D_1. Need for future indoor & structural pest control	• Building design shall incorporate features that discourage entry of pests.	• Provide Integrated Pest Management information to owners, lessees, and operators.
D_2. Landscape / outdoor pesticide use / building and grounds maintenance	• Final landscape plans will accomplish all of the following: • Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. • Minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. • Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. • Use pest-resistant plants, especially adjacent to hardscape. • To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	• Maintain landscaping using minimum or no pesticides. • See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance." • Provide IPM information to new owners, lessees and operators.
E. Pools, spas, ponds, decorative fountains, and other water features	• Pools and spas to be plumbed to sanitary sewer.	• See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance."

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
	• Sanitary sewer cleanout to be installed within 10 feet of pools and spas.	
F. Food service	• A sink or other area for cleaning floor mats, containers, and equipment shall be connected to a grease interceptor prior to discharging to the sanitary sewer system. The cleaning area shall be large enough to clean the largest mat or piece of equipment to be cleaned. • The cleaning area shall be indoors or in a covered area, and must be plumbed to the sanitary sewer.	• The grease interceptor will be maintained on a regular basis per the manufacturer's requirements.
G. Refuse areas	• Refuse areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, and screened to prevent off-site transport of trash. • Refuse areas shall contain a roof to minimize direct precipitation. • No drain connections shall be made to the Refuse area.	• Provide adequate number of receptacles. • Inspect receptacles regularly; repair or replace leaky receptacles. • Keep receptacles covered. • Prohibit/prevent dumping of liquid or hazardous wastes. • Post "no hazardous materials" signs. • Inspect and pick up litter daily and clean up spills immediately. • Keep spill control materials available on-site. • Clean by dry-sweeping only, or with wet/dry vacuum. • See Fact Sheet SC-34, "Waste Handling and Disposal"
H. Industrial processes	• All process activities to be performed indoors or undercover. No processes to drain to exterior or to storm drain system	• Industrial discharge will be mitigated to the winery process wastewater system and will not be discharged to storm drains
I. Outdoor Storage of Equipment or Materials	• Equipment and materials will be kept indoors to the maximum extent possible. If materials and equipment are outside they will be covered and protected.	• See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks
J. Vehicle / equipment cleaning	N/A	N/A
K. Vehicle / equipment repair and maintenance	N/A	N/A
L. Fuel dispensing areas	N/A	N/A
M. Loading docks	• Loaded and unloaded items will be moved indoors as soon as possible.	• See fact sheet SC-30, "Outdoor Loading and Unloading".

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
N. Fire sprinkler test water	• Fire sprinkler test water shall be discharged to the sanitary sewer.	• See the note in Fact Sheet SC-41, "Building and Grounds Maintenance"
O. Miscellaneous drain or wash water or other sources • Boiler drain lines • Condensate drain lines • Rooftop equipment • Drainage sumps • Roofing, gutters, and trim • Other sources	• Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain. • Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. • Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. • Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.	• If architectural copper is used, implement the following BMPs for management of rinsewater during installation: • If possible, purchase copper materials that have been pre-patinated at the factory. • If patination is done on-site, prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling off-site. • Consider coating the copper materials with an impervious coating that prevents further corrosion and runoff. • Implement the following BMPs during routine maintenance: • Prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling off-site.
P. Plazas, sidewalks, and parking lots		• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

V.B. Features, Materials, and Methods of Construction of Source Control BMPs

Source control BMPs will be designed and implemented per construction specifications and CASQA BMP fact sheets.

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The applicant accepts responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility is formally transferred to a subsequent owner.

An Operations & Maintenance Plan will be prepared for this project. The Owner shall execute a Post-Construction BMP Maintenance Agreement with the County of Napa upon request.

VI.B. Requirements for Each Stormwater Facility

The site incorporates ten Bioretention Facilities, three self-retaining areas and one self-treating area. The BMPs all require as needed maintenance for any damage that may occur. Semi-annual inspections are required for possible erosion, damaged vegetation, debris, and health of any trees or shrubs. These inspections usually occur at the beginning of the wet season and end of the wet season. Any dead or diseased vegetation should be removed and replaced during the inspection. An annual inspection is required to complete the annual report for all Stormwater Facilities. During this inspection mulch may be added, and tree stakes and wires replaced.

For all Stormwater facilities, refer to the Operation & Maintenance Plan for a full description of required inspections and maintenance requirements.

Construction Checklist

Table 11. Construction C3 Checklist

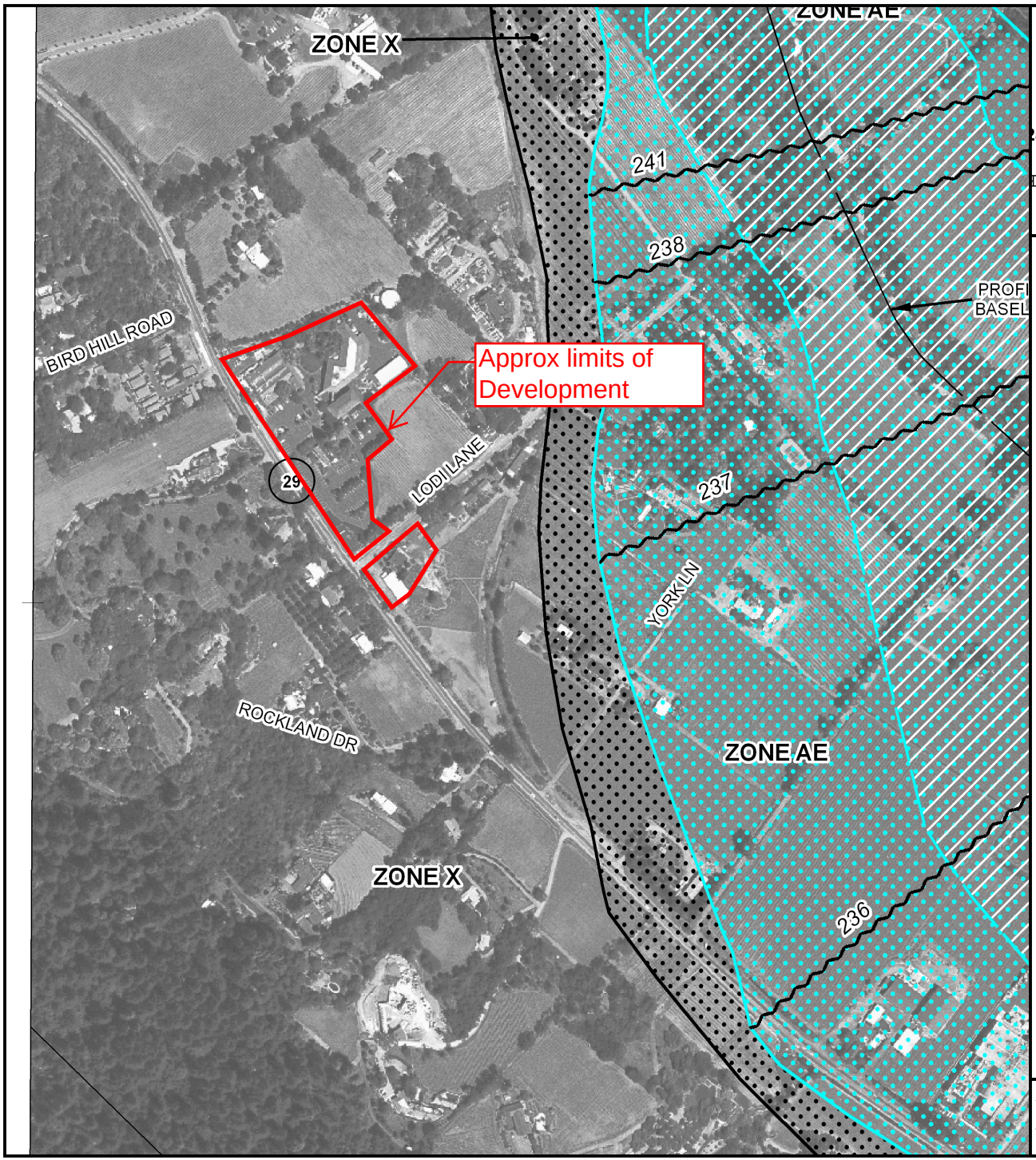
Stormwater Control Plan Page #	Source Control or Treatment Control Measure	Sheet
6	Bioretention Facilities	C3.0
8, 9	A. On-site storm drain inlets	C3.0
9	B. Interior floor drains	Arch
9	C. Interior Parking Garages	Arch
9	D1. Need for Future indoor & structural pest control	Arch
9	D2. Landscape/ outdoor pesticide use/ building and ground maintenance	C3.0
9, 10	E. Pools, spas, ponds, decorative fountains, and other water features	Arch
10	F Food Service	Arch
10	G. Refuse areas	Arch
10	H. Industrial Process	C3.0
10	I. Outdoor storage of equipment or materials	Arch
10, 11	M. Loading Docks	C3.0
11	N. Fire sprinkler test water	C4.1
11	O. Miscellaneous drain or wash	C3.0
11	P. Plazas, sidewalks, and parking lots	C3.0

V. Certifications

The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA Post-Construction Manual, dated July 14, 2014.

ATTACHMENT 1

FIRMETTE, SOILS MAP



MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0263E

FIRM

FLOOD INSURANCE RATE MAP

NAPA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 263 OF 650

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NAPA COUNTY	060205	0263	E
ST. HELENA, CITY OF	060208	0263	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06055C0263E

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Saturated Hydraulic Conductivity (Ksat), Standard Classes—Napa County, California
(Freemark Abbey)

Map Scale: 1:2,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very Low (0.0 - 0.01)
- Low (0.01 - 0.1)
- Moderately Low (0.1 - 1)
- Moderately High (1 - 10)
- High (10 - 100)
- Very High (100 - 705)
- Not rated or not available

Soil Rating Lines
- Very Low (0.0 - 0.01)
- Low (0.01 - 0.1)
- Moderately Low (0.1 - 1)
- Moderately High (1 - 10)
- High (10 - 100)
- Very High (100 - 705)
- Not rated or not available

Soil Rating Points
- Very Low (0.0 - 0.01)
- Low (0.01 - 0.1)
- Moderately Low (0.1 - 1)
- Moderately High (1 - 10)
- High (10 - 100)
- Very High (100 - 705)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 9, Sep 21, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Saturated Hydraulic Conductivity (Ksat), Standard Classes

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
104	Bale clay loam, 0 to 2 percent slopes	9.0000	0.0	0.3%
168	Perkins gravelly loam, 2 to 5 percent slopes	4.8486	0.5	3.1%
169	Perkins gravelly loam, 5 to 9 percent slopes	4.8486	16.5	96.7%
Totals for Area of Interest			**17.0**	**100.0%**

1 micrometers/sec = 0.14 in/hr
4.8486 micrometers/sec = 0.69 in/hr

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits. The classes are:

Very low: 0.00 to 0.01

Low: 0.01 to 0.1

Moderately low: 0.1 to 1.0

Moderately high: 1 to 10

High: 10 to 100

Very high: 100 to 705

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

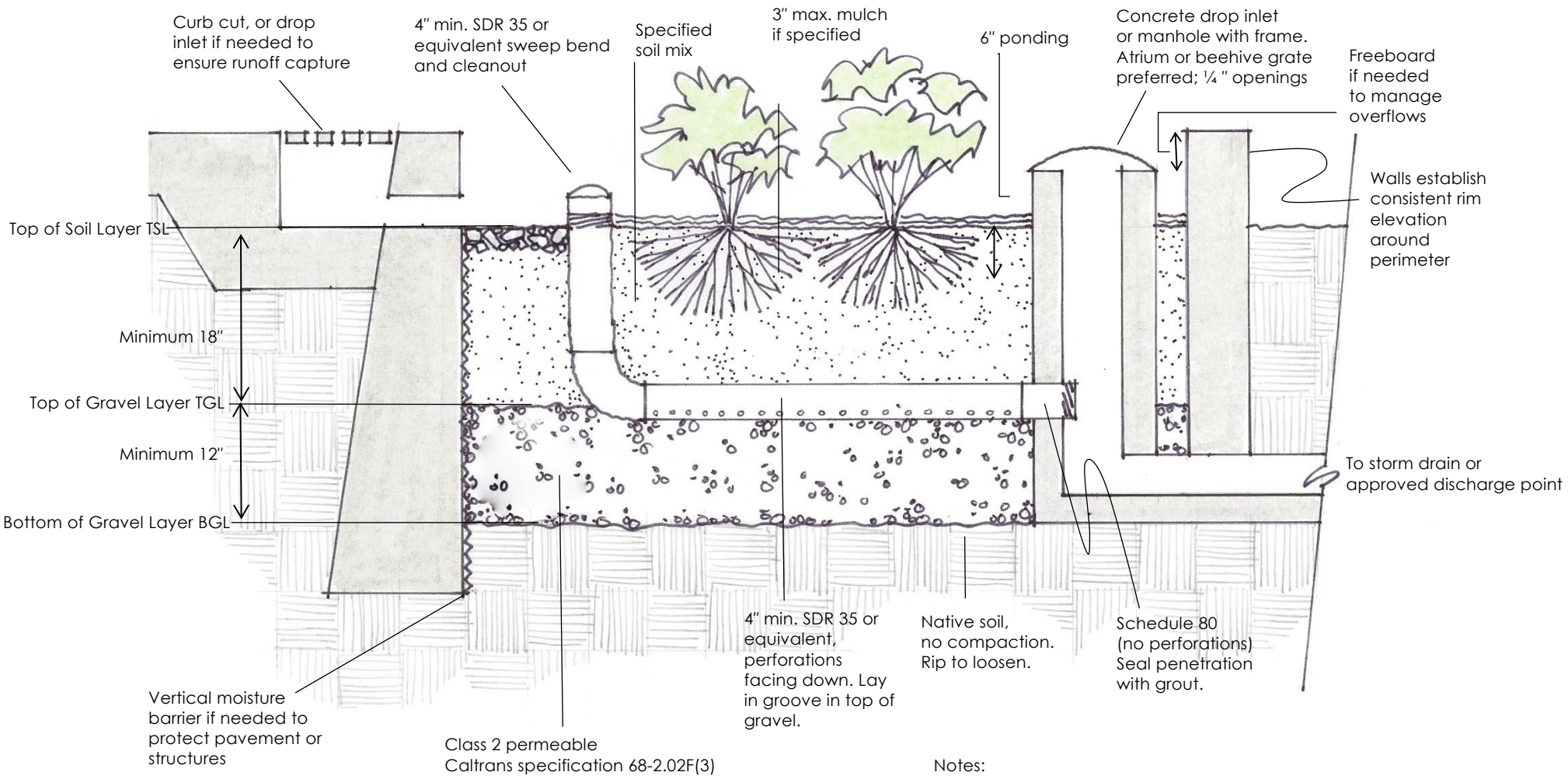
Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

ATTACHMENT 2

BIORETENTION CROSS-SECTION,
BIORETENTION CONSTRUCTION CHECKLIST

Figure 4-5. Bioretention Facility

Cross-section
Not to Scale



Notes:
No liner, no filter fabric, no landscape cloth.
Maintain BGL. TGL, TSL throughout facility area at elevations to be specified on drawing.
Elevation of perforated pipe underdrain is atop gravel layer.
See text for soil mix specification, planting and irrigation guidance.

Appendix B. Bioretention Facility Construction Inspection Checklist

Layout (to be confirmed prior to beginning excavation)

- ❒ Square footage of the facility meets or exceeds minimum shown in Stormwater Control Plan
- ❒ Site grading and grade breaks are consistent with the boundaries of the tributary Drainage Management Area(s) (DMAs) shown in the Stormwater Control Plan
- ❒ Inlet elevation of the facility is low enough to receive drainage from the entire tributary DMA
- ❒ Locations and elevations of overland flow or piping, including roof leaders, from impervious areas to the facility have been laid out and any conflicts resolved
- ❒ Rim elevation of the facility is laid out to be level all the way around, or elevations are consistent with a detailed cross-section showing location and height of interior dams
- ❒ Locations for vaults, utility boxes, and light standards have been identified so that they will not conflict with the facility
- ❒ Facility is protected as needed from construction-phase runoff and sediment

Excavation (to be confirmed prior to backfilling or pipe installation)

- ❒ Excavation conducted with materials and techniques to minimize compaction of soils within the facility area
- ❒ Excavation is to accurate area and depth
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ Moisture barrier, if specified, has been added to protect adjacent pavement or structures.
- ❒ Native soils at bottom of excavation are ripped or loosened to promote infiltration

Overflow or Surface Connection to Storm Drainage

(to be confirmed prior to backfilling with any materials)

- ❒ Overflow is at specified elevation
- ❒ No knockouts or side inlets are in overflow riser
- ❒ Overflow location selected to minimize surface flow velocity (near, but offset from, inlet recommended)
- ❒ Grating excludes mulch and litter (beehive or atrium-style grates with ¼" openings recommended)
- ❒ Overflow is connected to storm drain via appropriately sized piping

Underground connection to storm drain/outlet orifice

(to be confirmed prior to backfilling with any materials)

- ❒ Perforated pipe underdrain (PVC SDR 35 or approved equivalent) is installed with holes facing down
- ❒ Perforated pipe is connected to storm drain at specified elevation (typ. bottom of soil elevation)
- ❒ Cleanouts are in accessible locations and connected via sweep bends

Drain Rock/Subdrain (to be confirmed prior to installation of soil mix)

- ❒ Rock is installed as specified, 12" min. depth. Class 2 permeable, Caltrans specification 68-2.02F(3) recommended
- ❒ Rock is smoothed to a consistent top elevation. Depth and top elevation are as shown in plans
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ No filter fabric is placed between the subdrain and soil mix layers

Soil Mix

- ❒ Soil mix is as specified.
- ❒ Mix installed in lifts not exceeding 12"
- ❒ Mix is not compacted during installation but may be thoroughly wetted to encourage consolidation
- ❒ Mix is smoothed to a consistent top elevation. Depth of mix (18" min.) and top elevation are as shown in plans, accounting for depth of mulch to follow and required reservoir depth

Irrigation

- ❒ Irrigation system is installed so it can be controlled separately from other landscaped areas. Smart irrigation controllers and drip emitters recommended and may be required by code or ordinance.
- ❒ Spray heads, if any, are positioned to avoid direct spray into outlet structures

Planting

- ❒ Plants are installed consistent with approved planting plan, consistent with site water allowance
- ❒ Any trees and large shrubs are staked securely
- ❒ No fertilizer is added; compost tea may be used
- ❒ No native soil or clayey material are imported into the facility with plantings
- ❒ 1"-2" mulch may be applied following planting; mulch selected to avoid floating
- ❒ Final elevation of soil mix maintained following planting
- ❒ Curb openings are free of obstructions

Final Engineering Inspection

- ❒ Drainage Management Area(s) are free of construction sediment; landscaped areas are stabilized
- ❒ Inlets are installed to provide smooth entry of runoff from adjoining pavement, have sufficient reveal (drop from the adjoining pavement to the top of the mulch or soil mix, and are not blocked
- ❒ Inflows from roof leaders and pipes are connected and operable
- ❒ Temporary flow diversions are removed
- ❒ Rock or other energy dissipation at piped or surface inlets is adequate
- ❒ Overflow outlets are configured to allow the facility to flood and fill to near rim before overflow
- ❒ Plantings are healthy and becoming established
- ❒ Irrigation is operable
- ❒ Facility drains rapidly; no surface ponding is evident
- ❒ Any accumulated construction debris, trash, or sediment is removed from facility
- ❒ Permanent signage is installed and is visible to site users and maintenance personnel

ATTACHMENT 3

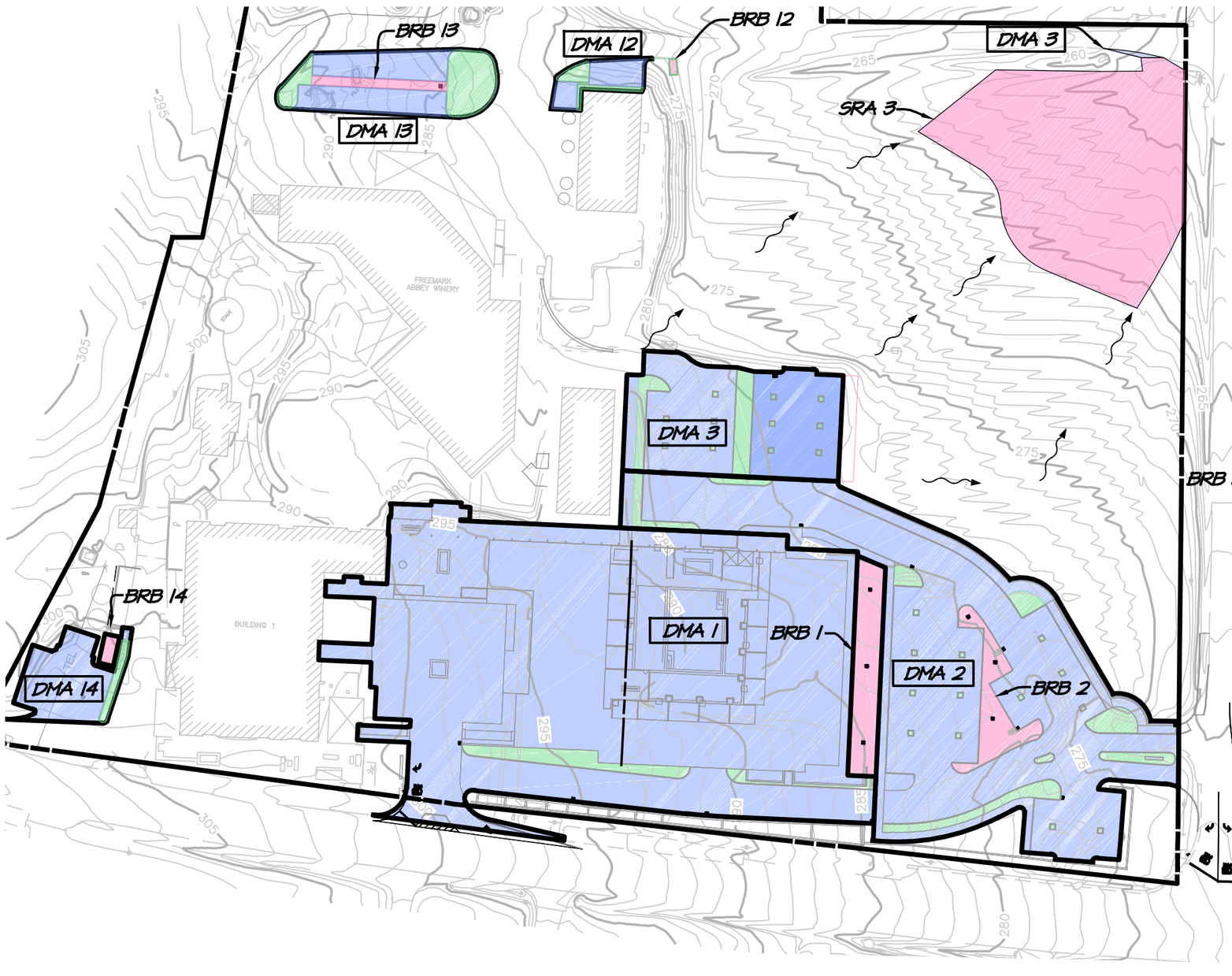
DRAINAGE MANAGEMENT AREAS EXHIBIT

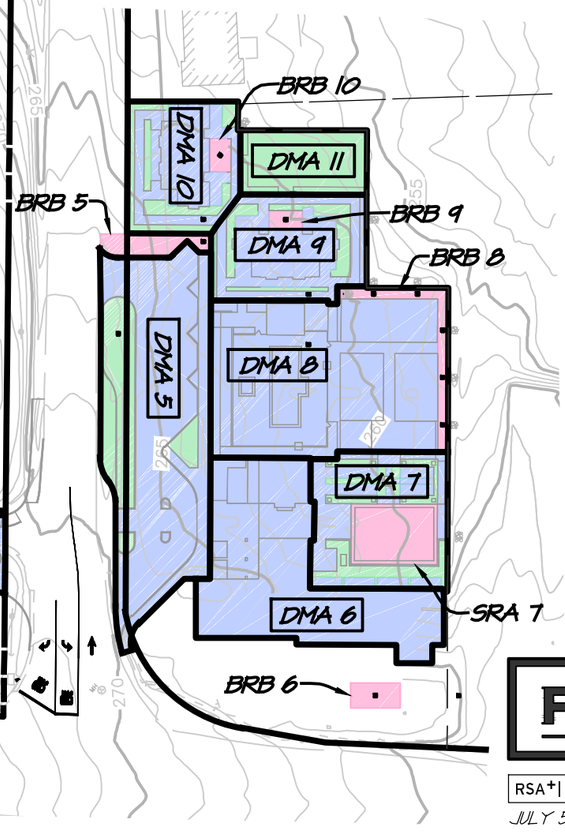
FREEMARK ABBEY
DRAINAGE MANAGEMENT AREA EXHIBIT

GRAPHIC SCALE

80 0 80 160

(IN FEET)
1 inch = 80 FT





DRAINAGE MANAGEMENT AREAS

DMA	(P) IMPERVIOUS	(P) PERVIOUS	DRAINS TO:	RECEIVING
1	59,960 SF	1,580 SF	BRB 1	2,720 SF
2	33,500 SF	2,700 SF	BRB 2	1,820 SF
3	9,400 SF	1,990 SF	SRA 3	19,198 SF
5	8,060 SF	2,150 SF	BRB 5	650 SF
6	7,590 SF	0	BRB 6	350 SF
7	2,440 SF	1,250 SF	SRA 7	1,460 SF
8	9,910 SF	0	BRB 8	714 SF
9	3,405 SF	755 SF	BRB 9	166 SF
10	2,765 SF	1,020 SF	BRB 10	198 SF
11	0	2,260 SF	STA 11	2,260 SF
12	995 SF	370 SF	BRB 12	45 SF
13	3,490 SF	1,670 SF	BRB 13	540 SF
14	3,000 SF	300 SF	BRB 14	200 SF

ABBREVIATIONS

DMA	DRAINAGE MANAGEMENT AREA
BRB	BIORETENTION BASIN
SRA	SELF RETAINING AREA
STA	SELF TREATING AREA
SF	SQUARE FOOT/FEET
(P)	PROPOSED

HATCH LEGEND

(P) IMPERVIOUS

(P) PERVIOUS

(P) RECEIVING

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + | est. 1980

JULY 5, 2018 4111050.2 Exh-DMA.dwg

Appendix H
Water Availability Analysis

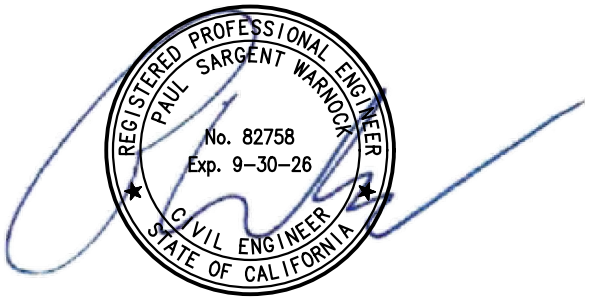
WATER AVAILABILITY ANALYSIS

For

The Inn at the Abbey
3022 St. Helena Highway
St. Helena, CA 94574

APNs: 022-130-023, -024, -027, -028
022-220-028, -029

Prepared for:
Jackson Family Investments
1000 Alexander Mountain Road
Geyserville, CA 95441



Project #4111050.2
August 26, 2022
Revised: February 28, 2025

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252. 4966.f

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1
II. WATER USE CALCULATIONS 3

ATTACHMENTS

1. WATER UTILITY PLAN, WATER SCHEMATIC
2. DOMESTIC AND PROCESS WATER CALCULATIONS FROM WASTEWATER FEASIBILITY REPORT
3. EXISTING WATER USE MEMO

I. EXECUTIVE SUMMARY

Jackson Family Investments is seeking a Use Permit for hotel use on the adjacent corners of Highway 29 and Lodi Lane in Saint Helena, California. The site of the proposed hotel development is comprised of five parcels. The parcels to the north of Lodi Lane total 10.30 ± acres and include APNs 022-130-023, -024, -027 and -028. These will be referred to as the North Parcel. The 3.49 acre parcel to the south of Lodi Lane is APN 022-220-028. This, along with the adjoining 1.34-acre residential parcel, APN 022-220-029, will be referred to as the South Parcel.

A public water system currently exists on the North Parcel, served by two on-site wells and a connection to City of St. Helena water. A separate public water system exists on the South Parcel, served by one well on the residential parcel. This project proposes to integrate the proposed hotel development on the South Parcel with the North Parcel public water system. The South Parcel well (Alumbaugh Well) will be limited to less than 10 GPM pumping rate. The Alumbaugh Well production will not exceed the total existing South Parcel water use of 3.18 AF/yr. Refer to Well Location Map and South Parcel Well Completion Log in Attachment 1.

This project proposes to install a new winery process wastewater treatment system on the North Parcel to supplement well water use for vineyard irrigation. This is included in the North Parcel water calculations. This project also proposes a new greywater treatment system for on-site reuse as irrigation and non-potable hotel use (toilet flush). Greywater will supply 100% of the South Parcel landscape water demand. Therefore, the South Parcel landscape water demand has been excluded from the calculations.

Additional water savings may be attained by increasing the greywater capture/treatment, and allowing for recycled water to be exported to nearby properties. This exported greywater would help nearby parcels reduce their own groundwater demand for irrigation and non-potable uses. Refer to Water Schematic Exhibits in Attachment 1.

To avoid the transfer of City of St. Helena water to the South Parcel, the municipal City water service will be disconnected from the existing blending system, and will instead serve the North Parcel buildings directly. The North Parcel buildings will maintain an auxiliary connection to the on-site Public Water System for backup use if the City water allotment is depleted. Reduced pressure backflow preventors will be installed as required to prevent cross-connection of on-site and City public water systems.

Below is a summary of the existing and proposed water use for the proposed project. Detailed calculations can be found on the following pages. This report demonstrates that the proposed project will result in no net increase of water use, and a 20% reduction in groundwater use.[1]

[1] New Napa County groundwater well permitting procedures to implement Executive Order N-7-22 allow for 0.3 af/yr/acre or no net increase in water use for parcels within the Napa Valley sub-basin.

Total existing and proposed water use for the North and South Parcels is as follows. There is no net increase in total water use for this project.

TOTAL EXISTING WATER USE[2]

Item	Quantity [af/yr]
North Parcel Water Use	15.88
South Parcel Water Use	3.18
Total Existing Water Use	**19.06**

TOTAL PROPOSED WATER USE

Item	Quantity [af/yr]
North Parcel Water Use	14.03
South Parcel Water Use	4.68
Total Proposed Water Use	**18.71**

Existing and proposed Groundwater use for the North and South Parcels is as follows. There is no net increase in Groundwater use for this project.

TOTAL EXISTING GROUNDWATER USE

Item	Quantity [af/yr]
North Parcel Water Use	15.88
South Parcel Water Use	3.18
City of Saint Helena Water Allotment	-8.29
Total Existing Groundwater Use	**10.77**

TOTAL PROPOSED GROUNDWATER USE

Item	Quantity [af/yr]
North Parcel Water Use	14.03
South Parcel Water Use	4.68
North Parcel City Water[1]	-7.85
North Parcel Treated Process WW	-0.92
North Parcel Treated Greywater	-1.16
South Parcel Treated Greywater	-0.16
Total Proposed Groundwater Use[2]	**8.62**

[1]Max North Parcel City Water is 2.70 MGY (8.29 af/yr)
[2]Max total Groundwater use not to exceed 10.77 af/yr based on existing groundwater use.

[2] For existing water uses refer to the "Inn at the Abbey – Existing Permitted Water Use" Memorandum dated March 03, 2022 prepared by RSA+, in Attachment 3.

TOTAL WATER SUPPLY

Item	Quantity [af/yr]
Total Groundwater	10.77
Treated Process Water	0.92
North Parcel City Water Allotment	8.29
Total Allotted Water Supply	**19.98**

New Napa County groundwater well permit procedures to implement executive order N-7-22 allow for 0.3 af/ac/yr or no net increase for parcels within the Napa Valley sub-basin. This report demonstrates that the proposed project will result in no net increase in groundwater use, at 10.77 af/yr.

II. WATER USE CALCULATIONS

NORTH PARCEL PROPOSED WATER USE

Use Description	Use Units	Rate	Annual AF
North Parcel Domestic [1]	3.10 MG/Y	1 AF/0.325851 MG	9.51
Winery Process Water [1]	0.30 MG/Y	1 AF/0.325851 MG	0.92
Vineyard Irrigation	2.44 AC	0.50 AF/AC	1.22
Landscape Irrigation [2]	1.09 AC	2.18 AF/AC	2.38
North Parcel Total:			**14.03**

[1] From Domestic and Winery Process Water Calculations in Wastewater Feasibility Report. Total existing North Parcel Buildings and proposed North Parcel Hotel Water Use (5.12 AF + 5.31 AF = 10.43 AF combined) in Attachment 2 includes North Parcel Domestic and Winery Process Water (9.51 AF + 0.92 AF = 10.43 AF combined). See Attachment 2 for addition information.

[2] (0.1 AF/2,000 SF)(43,560 SF/AC) = 2.18 AF/AC

SOUTH PARCEL PROPOSED WATER USE

Use Description	Use Units	Rate	Annual AF
South Parcel Hotel [1,5]	3,975 GPD	1 AF/325,851 Gal x365 daysx0.70	3.12
South Parcel Landscape Irrigation [2]	-	-	-
York Lane Residence [3]	-	-	-
Lodi Lane Residences[4]	12Bedrooms	0.13 AF/Bedroom	1.56
South Parcel Total:			**4.68**

[1] From Domestic and Winery Process Water Calculations in Wastewater Feasibility Report. See Attachment 2.

[2] South Parcel Landscape Irrigation is supplied entirely by treated greywater, and not included in these calculations.

[3] The York Lane Residence has a separate, City of St. Helena water supply, and is not included in these calculations.

[4] (120 GPD)(365 Days)/(325,851 GAL/AF)=0.13 AF

[5] Assumes a 70% occupancy factor for South Parcel Hotel, similar to North Parcel Hotel. See Attachment 2 for North Parcel Occupancy factors.

TOTAL PROPOSED WATER USE

Use Description	Annual AF
North Parcel Total	14.03
South Parcel Total	4.68
Total Water Use:	**18.71**

ATTACHMENT 1

Water Utility Plan, Water Schematic Exhibits, Well Location Map, Alumbaugh Well Completion Report

JACKSON FAMILY INVESTMENTS

(E) ALLMEAUGH WELL

MATCH LINE - SEE BELOW

ASSUMED LOCATION OF WELL SUPPLY LINE TO DW TANK TO BE ABANDONED

(E) DW TANK TO BE ABANDONED

IRON & MANGANESE FILTERS

CHLORINE TREATMENT TANK

10,000 GAL DW TANK

RES 1

(E) DEDICATED CITY OF ST. HELENA WATER SERVICE RES 1 ONLY

ASSUMED LOCATION OF DW LINE FROM DW TANK TO BE ABANDONED

CONNECT TO (E) WELL WATER

REDUCED PRESSURE BACKFLOW PREVENTER

CAP & ABANDON (E) WELL SUPPLY LINE TO DW TANK

RES 5 & 6

RES 4

RES 3

RES 2

CAP & ABANDON (E) DW LINE FROM DW TANK

TO AMEN VINEYARD IRRIGATION & LINES TO 3 VINEYARD BLDGS

WILSON WELL TO ADJACENT PROPERTY

STEEL TANK TO IRRIGATION

RED 6V FROM VINEYARD WELL

(2) BLACK 6VA FROM WILSON WELL

VINEYARD WELL & STEEL TANK TO IRRIGATION

2" WELL WATER TO BLENDING SYSTEM

FROM WILSON WELL

H3 / ETE WASH

MAINT. BLDG

FREEMARK ABBEY WINERY

(E) VINEYARD WELL

OFFICE

(E) DW BLENDING SYSTEM

BUILDING 1

(E) ABBY WELL

BUILDING 2

S.L.A.D. FOR CONTINUATION

BUILDING 5

BUILDING 6

APPROXIMATE ZONING LINE

BLDG 5

BUILDING 4

(4) FDC / PIV

BUILDING 3

MATCH LINE SEE ABOVE

ASSUMED LOCATION OF WELL SUPPLY LINE TO DW TANK TO BE ABANDONED

ASSUMED LOCATION OF DW LINE FROM DW TANK TO BE ABANDONED

CAP & ABANDON (E) DW LINE TO RESIDENCES 2-6

CAP & ABANDON (E) CITY WATER SERVICE TO BLENDING SYSTEM - REROUTE CITY WATER SERVICE TO SERVE NORTH PARCEL HOTEL ONLY

RELOCATE (E) CITY WATER METER AND REDUCED PRESSURE BACKFLOW PREVENTER

CONNECT TO (E) 4" IW

CONNECT TO (E) 4" DW

CONNECT TO (E) 8" FW

WATER VAULT

GRAPHIC SCALE

40 0 40 80

(IN FEET)
1 inch = 40 FT

NOTE

NORTH PARCEL INTERNAL PROPERTY LINES NOT SHOWN FOR CLARITY.

REGISTERED PROFESSIONAL ENGINEER PAUL SARGENT WARNICK No. 82758 Exp: 9-30-22 CIVIL ENGINEER STATE OF CALIFORNIA

THE INN AT THE ABBEY Est. 1886

C4.1 - UTILITY PLAN - WATER

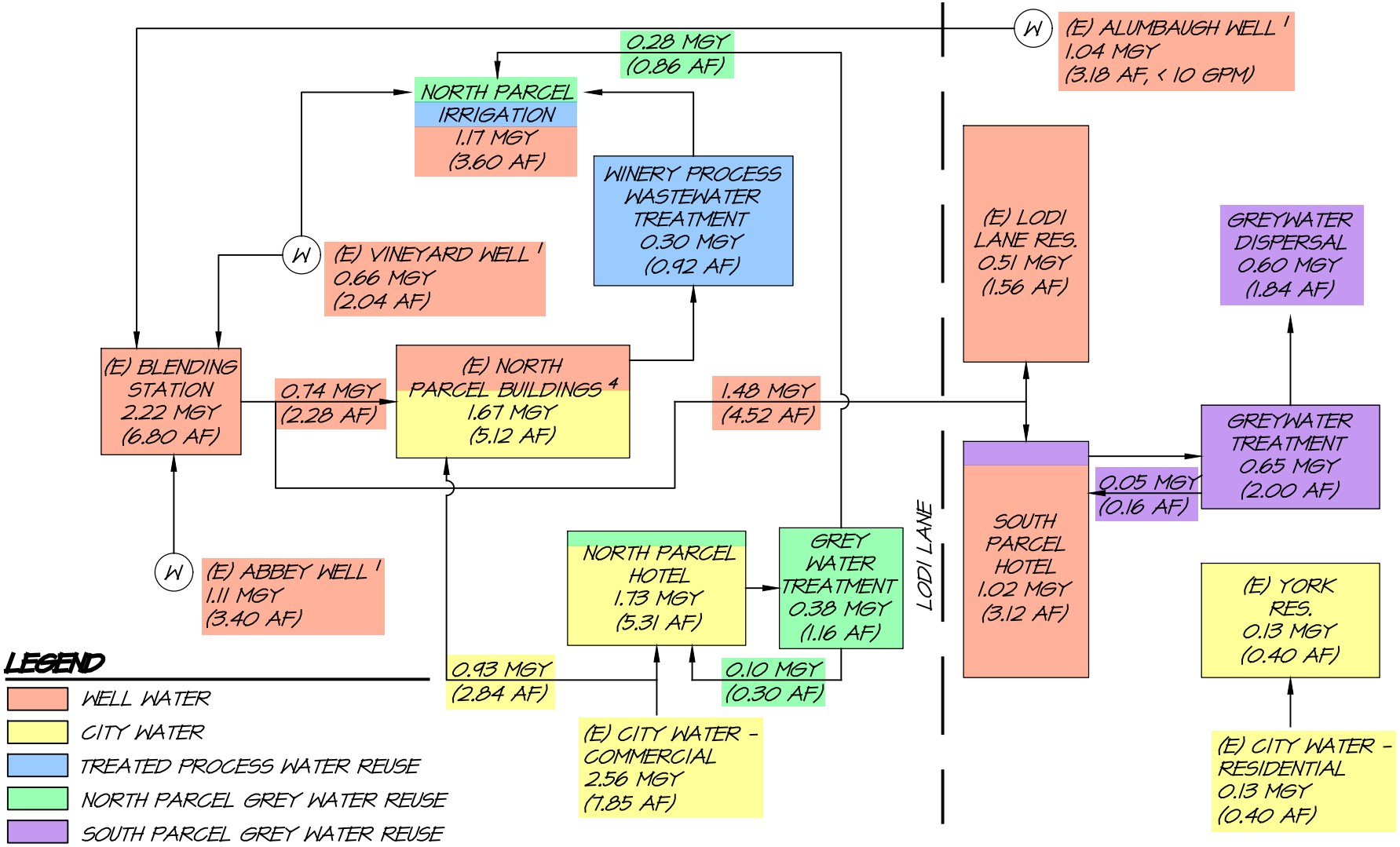
PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION JANUARY 2022

RSA* Job #: 4111050.2
Drawn: JFW/LMM Design: PSW

R:\2011\4111050.2-Freemark_Abbey_Development_Plans_DR\permits\DRB\CAD\Utility.dwg 02/15/2022 8:26:29 AM lmahjorn COPYRIGHT RSA+

THE INN AT THE ABBEY
WATER SCHEMATIC EXHIBIT
GREYWATER IRRIGATION + HOTEL DUAL PLUMBING



NOTES:

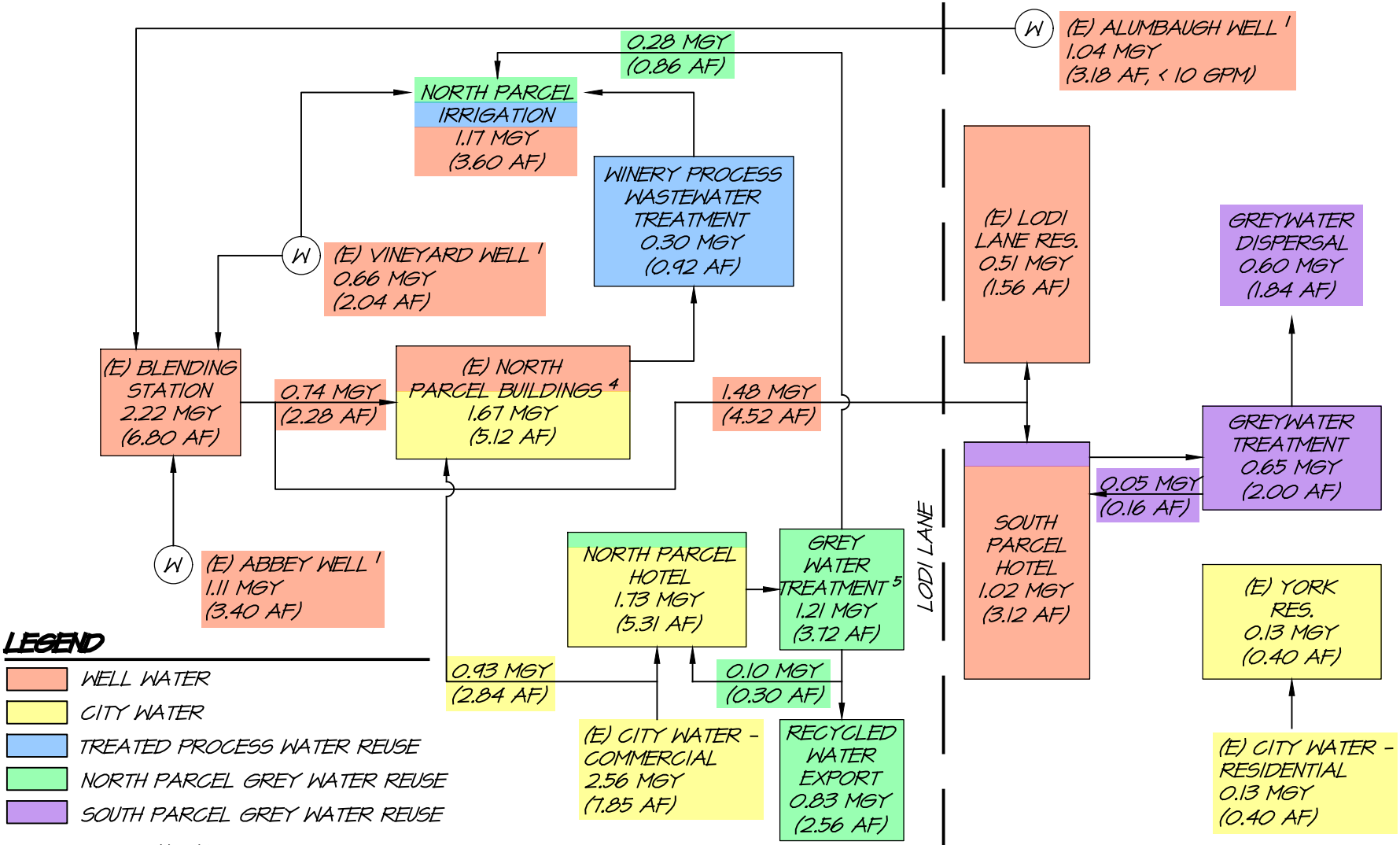
1. DISTRIBUTION BETWEEN ABBEY, VINEYARD, AND ALUMBAUGH WELL IS VARIABLE AND SUBJECT TO CHANGE. THE ALUMBAUGH WELL WILL BE LIMITED TO LESS THAN 10 GPM PUMPING RATE AND 3.18 AF/YR.
2. TOTAL GROUNDWATER USE NOT TO EXCEED 10.77 AF/YR (NO NET INCREASE).
3. PROPOSED GROUNDWATER USE TO BE 8.62 AF/YR (20% DECREASE).
4. INCLUDES 0.92 AF OF WINERY PROCESS WATER. REFER TO NORTH PARCEL PROPOSED WATER USE TABLE IN SECTION II FOR ADDITIONAL INFORMATION.

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE | 707 | 252.3301
+ www.RSAcivil.com +

RSA+ | CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

JAN. 6, 2025 4111050.2 Exh-Water Sch-Opt.2.dwg

THE INN AT THE ABBEY
WATER SCHEMATIC EXHIBIT
WITH OPTIONAL RECYCLED WATER EXPORT



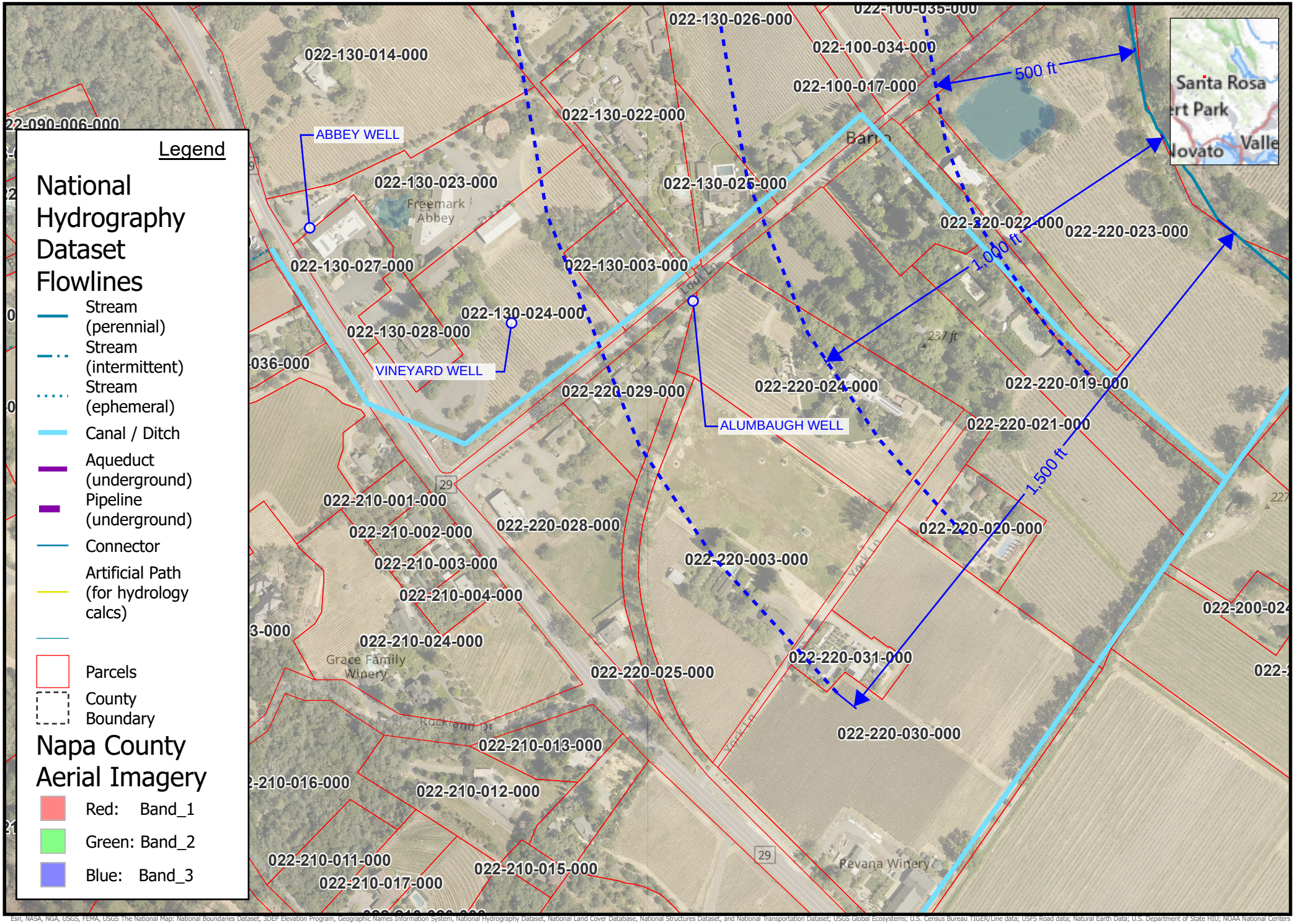
NOTES:

1. DISTRIBUTION BETWEEN ABBEY, VINEYARD, AND ALUMBAUGH WELL IS VARIABLE AND SUBJECT TO CHANGE. THE ALUMBAUGH WELL WILL BE LIMITED TO LESS THAN 10 GPM PUMPING RATE AT 3.18 AF/YR.
2. TOTAL GROUNDWATER USE NOT TO EXCEED 10.77 AF/YR (NO NET INCREASE).
3. PROPOSED GROUNDWATER USE TO BE 8.62 AF/YR (20% DECREASE).
4. INCLUDES 0.92 AF OF WINERY PROCESS WATER. REFER TO NORTH PARCEL WATER USE TABLE IN SECTION II FOR ADDITIONAL INFORMATION.
5. 70% MAX. GREYWATER CAPTURE.

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

JAN. 6, 2025 4111050.2 Exh-Water Sch-Opt.3.dwg



Esri, NASA, NGA, USGS, FEMA, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers

0 0.02 0.04 0.07 mi

Well Location Map

Printed On: 2/27/2025

Disclaimer: This map was prepared for informational purposes only. No liability is assumed for the accuracy of the data delineated hereon.

County of Napa, Napa GIS
County of Napa, PBES Dept

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 475958

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

y
. of
s Well No.
Work Began 7-28-97 Ended 7-31-97
Local Permit Agency Napa County
Permit No. 52961 Permit Date 7-14-97

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 25 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0 25	clay & boulders
25 46	sandy clay & boulders
46 51	clay
51 280	green clay & rock
280 400	greenish, streaks of broken up black rock

TOTAL DEPTH OF BORING 400 (Feet)

TOTAL DEPTH OF COMPLETED WELL 400 (Feet)

WELL OWNER

Name Norm Hungbaugh

Mailing Address 1850 Pope Canyon rd.

City Pope Valley State Ca. ZIP

WELL LOCATION

Address 1157 Lodi Lane

City St Helena

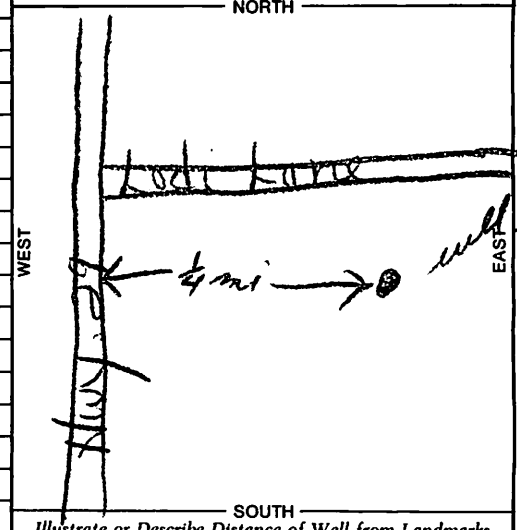
County Napa

APN Book ___ Page ___ Parcel 22-220-029

or Township ___ Range ___ Section ___

or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

X Domestic

___ Public

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD ROTARY FLUID MUD

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 30 (Ft.) & DATE MEASURED 7-30-97

ESTIMATED YIELD* 60 (GPM) & TEST TYPE AIR LIFT

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN 300 (Ft.)

** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 53	11"	X				PLASTIC	5"	200	
53 100	9⅞	X				"	"	"	
100 400	"		FACT PREP			"	"	"	32

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 53	X			
53 400		PEA	GRAVEL	

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Pullam Well Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 3877 Piedmont Ave. CITY Napa STATE Ca. ZIP 94558

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-2-97

C-57 LICENSE NUMBER 248677

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ATTACHMENT 2

Domestic and Process Water Calculations from Wastewater Feasibility Report

NORTH PARCEL PEAK DOMESTIC WASTEWATER FLOWS

Use Description	Use Units	No. Units	Unit Rate Napa County Table 4 [gal/day/unit]	Total [gal/day]
Stone Building:				
Barrel Room (Event Space)	Meals	100	15	**1,500**
Dining & Bar				
- Wine Library (12 Seats)	Visitors	12	3	36
- Restaurant - Dining (150 Seats)	Meals	293	15	4,395
- Restaurant - Bar & Cocktail (29 Seats)	Meals	57	8	456
Subtotal Dining & Bar				**4,887**
Employees & Tasting				
- Stone Building Employees	Employees	10	15	150
- Tasting Room Visitors	Visitors	100	3	300
Subtotal Employees & Tasting				**450**
Hotel:				
Lodging (50 rooms)	Rooms	50	125	6,250
Pools Use (50 rooms)	Rooms	50	10	500
Laundry (North and South Parcels)[1]	Rooms	N/A	20	0
Subtotal Hotel				**6,750**
Winery Building:				
Winery				
- Tasting Room	Visitors	100	3	300
	Employees	15	15	225
Subtotal Winery Building				**525**
Office Building:				
Winery Storage and Office Building	Persons	35	15	**525**
Grand Total North Parcel				**14,637**

[1]Off-site laundry services will be utilized for the proposed project.

SOUTH PARCEL PEAK DOMESTIC WASTEWATER FLOWS

Use Description	Use Units	No. Units	Unit Rate [gal/day/unit]	Total [gal/day]	Greywater Percent	Greywater Total [gal/day]
Hotel Villas:						
Hotel						
- Lodging (23 rooms)	Rooms	23	125	2,875	91	2,616
- Casitas (6 rooms)	Rooms	6	125	750	91	683
- Pool Use (29 rooms)	Rooms	29	10	290	0	0
Meeting Space	Persons	20	3	60	33	20
Subtotal Hotel & Meeting Space				**3,975**		**3,319**
Residential:						
York Lane Residence	Bedrooms	3	120	**360**	0	**0**
Grand Total South Parcel				**4,335**		**3,319**

IV. DOMESTIC WASTEWATER TO CWMS

Freemark Abbey is permitted to send 4.0 MG/year wastewater to the CWMS. It is proposed that a portion of the domestic wastewater from the new hotel development on the north parcel, combined with the existing domestic wastewater flows, will be served by this CWMS. This equates to a proposed wastewater flow to the CWMS of 2.72 MG/year.

NORTH PARCEL ANNUAL DOMESTIC WASTEWATER FLOWS

Building - Use	Peak Flows (gal/day)	Occupancy/ Factor	Annual (MG/yr)
Stone Building			
- Barrel Room	1,500	0.45	0.25
- Dining & Bar	4,887	0.45	0.80
- Employees & Tasting	450	0.50	0.08
Hotel	6,750	0.70	1.73
Winery	525	0.55	0.10
Office	525	0.70	0.14
Total North Parcel Flows			**3.10**
North Parcel Greywater Recycling (minimum)			**0.38**
North Parcel Annual Flow to CWMS			**2.72**

VIII. WINERY PROCESS WASTEWATER CHARACTERISTICS

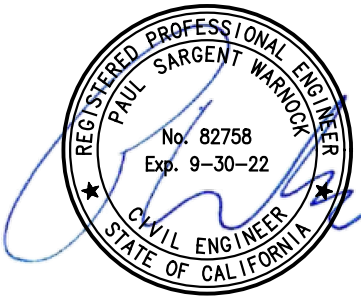
The following is a summary of the winery wastewater characteristics:

Wine Production:	60,000 gallons of wine per year 2.38 gallons of wine per case 25,210 cases/year
Wastewater Production:	5 gallons of wastewater/gallon of wine 300,000 gallons/year
Peak Daily Waste Water Flow:	Crush Period = 60 days Annual wine production x 1.5 / 60 1,500 gallons/day
Average Daily Flow:	300,000/365 = 822 gallons/day

ATTACHMENT 3

Existing Water Use Memo

1515 Fourth Street
Napa, CA 94559
(707) 252-3301
(707) 252-4966 Fax



MEMORANDUM

Job#:	4111050.2
Date:	March 3, 2022
To:	Napa County Planning Division
From:	Paul S. Warnock, PE
Subject:	The Inn at the Abbey – Existing Permitted Water Use

I. EXECUTIVE SUMMARY

Jackson Family Investments is seeking a Use Permit for hotel use on the adjacent corners of Highway 29 and Lodi Lane in Saint Helena, California. The site of the proposed hotel development is comprised of five parcels. The parcels to the north of Lodi Lane total 10.30 +/- acres and include APNs 022-130-023, -024, -027 and -028. These will be referred to as the North Parcel. The 3.49 acre parcel to the south of Lodi Lane is APN 022-220-028. This, along with the adjoining 1.34-acre residential parcel (APN 022-220-029), will be referred to as the South Parcel.

A Water Availability Analysis (WAA) was prepared for this project by RSA+, which demonstrates that sufficient water is available to serve the proposed project. Groundwater metering data is not currently available for these parcels, so we have prepared the below estimate of the existing water use based on the existing approved uses and structures for comparison to the project's WAA. Wastewater flows were used to supplement WAA guidelines in calculating water usage. Detailed calculations can be found on the following pages. A Groundwater recharge rate of 1.0 af/yr/acre for valley floor was used pursuant to Napa County mapping.

TOTAL EXISTING WATER USE

Item	Quantity [af/yr]
North Parcel Water Use	15.88
South Parcel Water Use	3.18
Total Water Use	**19.06**

TOTAL EXISTING WATER SUPPLY

Item	Quantity [af/yr]
North Parcel Groundwater	10.30
City of Saint Helena Water Allotment	8.29
South Parcel Groundwater	4.83
Total North Parcel Water Supply	**23.42**

II. EXISTING WATER USE CALCULATIONS

EXISTING NORTH PARCEL WATER USE

Use Description	Use Units	Rate	Annual AF
North Parcel Domestic & Process [1]	4.00 MG/Y	1 AF/0.325851 MG	12.28
Vineyard Irrigation	2.44 AC	0.50 AF/AC	1.22
Landscape Irrigation [2]	1.09 AC	2.18 AF/AC	2.38
North Parcel Total:			**15.88**

[1] From CWMS Report by Summit Engineering, dated November 19, 2002.

[2] (0.1 AF/2,000 SF)(43,560 SF/AC) = 2.18 AF/AC

EXSTING SOUTH PARCEL WATER USE

Use Description	Use Units	Rate	Annual AF
South Parcel Domestic [1]	1,210 GPD	1 AF/325,851 Gal x365 days	1.36
South Parcel Landscape Irrigation [2]	230 GPD	1 AF/325,851 Gal x365 days	0.26
York Lane Residence [3]	-	-	-
Lodi Lane Residences[4]	12Bedrooms	0.13 AF/Bedroom	1.56
South Parcel Total:			**3.18**

[1] From Domestic Water Calculations in Wastewater Feasibility Report.

[2] Assume Landscape Irrigation = 16% total water use, similar to North Parcel.

[3] The York Lane Residence has a separate, City of St. Helena water supply, and is not included in these calculations.

[4] (120 GPD)(365 Days)/(325,851 GAL/AF)=0.13 AF. For reference, WAA guidelines allow for 0.20 – 0.50 AF for each Secondary Residence, which gives a range of 1.00 – 2.50 AF for the five Lodi Lane residential units.

TOTAL EXISTING WATER USE

Use Description	Annual AF
North Parcel Total	15.88
South Parcel Total	3.18
Total Existing Water Use:	**19.06**

III. EXISTING WATER SUPPLY CALCULATIONS

Source	Use Units	Rate	Annual AF
North Parcel Groundwater	10.30 AC	1 AF/AC	10.30
City of Saint Helena Water Allotment	2.70 MG/Y	1 AF/0.325851 MG	8.29
South Parcel Groundwater	4.83 AC	1 AF/AC	4.83
Total Water Supply:			**23.42**

APPENDIX 1

Existing Domestic and Process Water Calculations For North Parcel Permitted Uses

FREEMARK ABBEY WINERY COMPLEX

The wastewater from the Freemark Abbey Winery (FMA) complex includes wastewater from FMA, Silverado Brewery and Brava Restaurant. For each of these entities and the FMA complex the *projected* PW and SW is calculated below.

Freemark Abbey Winery

PROCESS WASTEWATER

Annual Volume

Annual production (projected)	=	1,260 tons/year
Wine generation rate	=	165 gal wine/ton
	=	1,260 tons/year x 165 gal wine/ton
	=	207,900 gal wine/year
PW generation rate (Historic)	=	6.0 gal PW/gal wine
Annual PW flow	=	207,900 gal wine x 6.0 gal PW/gal wine
	=	1,247,400 gal PW

Use 1.25 Mgal PW

SANITARY WASTEWATER

SW at the Freemark Abbey Winery consists of wastewater generated from offices, retail shop, restrooms, laboratory, and kitchen/lunch room facilities. *Projected* SW flows are projected as follows:

Average Day

Full-time employees	28 @ 20 gpcd	=	560
Seasonal employees	3 @ 20 gpcd	=	60
Retail employees	4 @ 20 gpcd	=	80
Office employees	6 @ 20 gpcd	=	120
Tasting Visitors	100 @ 2.5 gpcd	=	250
Business Visitors	10 @ 2.5 gpcd	=	25
			1,095 gpd

50 weeks x 6 days per week x 1,095 gpd = 0.33 Mgal/yr SW

TOTAL ANNUAL WASTEWATER FLOW

PW + SW = 1.25 Mgal/yr + 0.33 Mgal/yr = 1.58 Mgal/yr

Silverado Brewery

PROCESS WASTEWATER

Annual Volume

Annual production (projected)	=	20,000 gal beer/year
PW generation rate (Assumed)	=	6 gal PW/gal beer
Annual PW flow	=	20,000 gal beer x 6 gal PW/gal beer
	=	120,000 gal PW

Use 0.12 Mgal PW

SANITARY WASTEWATER

SW at the Silverado Brewery consists of wastewater generated from restrooms, tasting, restaurant and kitchen facilities. *Projected* SW flows are projected as follows:

Average Day

Full-time employees	8 @ 20 gpcd	= 160
Part-time employees	20 @ 20 gpcd	= 400
Restaurant (customers)	150 @ 10 gpcd	= 1,500
Tasting Visitors	100 @ 2.5 gpcd	= 250
Business Visitors	5 @ 2.5 gpcd	= 12.5
		2,322.5 gpd

50 weeks x 6 days per week x 2,322.5 gpd = 0.70 Mgal/yr SW

TOTAL ANNUAL WASTEWATER FLOW

PW + SW = 0.12 Mgal/yr + 0.70 Mgal/yr = 0.82 Mgal/yr

Brava Restaurant

SANITARY WASTEWATER

SW at the Brava restaurant will consist of typical wastewater generated from restrooms, restaurant and kitchen facilities. *Projected* SW flows are projected as follows:

Average Day

Full-time employees	20 @ 20 gpcd	= 400
Part-time employees	8 @ 20 gpcd	= 160
Restaurant (customers)	150 @ 10 gpcd	= 1,500
		2,060 gpd

50 weeks x 6 days per week x 2,060 gpd = 0.62 Mgal/yr

FREEMARK ABBEY COMPLEX (including Brava Restaurant & Silverado Brewery)

TOTAL ANNUAL WASTEWATER FLOW

Freemark Abbey Winery	1.58 Mgal/yr
Silverado Brewery	0.82 Mgal/yr
Brava Restaurant	0.62 Mgal/yr
Subtotal	3.02 Mgal/yr
Inflow and Infiltration @ 33 percent	1.00 Mgal/yr
Total	4.02 Mgal/yr

Use 4.0 Mgal/yr

CULINARY INSTITUTE OF AMERICA

The Culinary Institute of America is proposing an expansion to the restaurant, dormitories and renovations to the still house. More detailed information is available in the Culinary Institute of America Water and Wastewater Phase I Projection, issued on January 14, 2002 by Summit Engineering Inc., supporting calculations of which are provided as an attachment to this document.

SANITARY WASTEWATER

Average Day

From CIA Projections = 7.7 Mgal/yr

WINE COUNTRY INN

The current renovation is not anticipated to increase the wastewater flows. In order to provide for potential increased occupancy in the future, potential future development of a spa and past meter inaccuracies, the SW flows from Wine Country Inn (WCI) are *projected* to be 10 percent greater than the historic peak annual flow.

Projected Annual SW Flow = Historic Peak Annual SW Flow x 110%
= 1.087 Mgal/yr x 110%
= 1.20 Mgal/yr SW

APPENDIX 2

Existing Domestic Water Calculations
For South Parcel Permitted Uses

EXISTING SOUTH PARCEL PEAK DOMESTIC WASTEWATER FLOWS

Use Description	Use Units	No. Units	Unit Rate [gal/day/unit]	Total [gal/day]	Greywater Percent	Greywater Total [gal/day]
Commercial:						
Cafe						
- Art Gallery Visitors	Persons	50	3	150	0	0
- Art Gallery Employees	Persons	4	15	60	0	0
- Wine Tasting Shop Visitors	Persons	100	3	300	0	0
- Wine Tasting Shop Employees	Persons	5	15	75	0	0
Subtotal Cafe Building				**585**		**0**
Motel	Rooms	5	125	**625**	**0**	**0**
Total Commercial:				**1,210**		
York Lane Residence	Bedrooms	3	120	**360**	0	**0**
Grand Total South Parcel				**1,570**		**0**

Appendix I

Water System Feasibility Study

WATER SYSTEM FEASIBILITY STUDY

For

The Inn at the Abbey
3022 St. Helena Highway
St. Helena, CA 94574

APNs: 022-130-023, -024, -027, -028
022-220-028, -029

Prepared for:

Jackson Family Investments
1000 Alexander Mountain Road
Geyserville, CA 95441

#4111050.2

February 2020

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252.4966.f

Table of Contents

I. TECHNICAL CAPACITY 1
I.A. System Description 1
I.B. Projected Water Demand 2
I.C. Water Supply Capacity 2
I.D. Source Adequacy 2
I.E. Water Quality 2
II. MANAGERIAL 3
II.A. General 3
II.B. Operation and Maintenance 3
II.C. Monitoring and Testing 3
II.D. Financial 3

I. TECHNICAL CAPACITY

I.A. System Description

Jackson Family Investments is seeking a Use Permit for hotel use on the adjacent corners of Highway 29 and Lodi Lane in Saint Helena, California. The site of the proposed hotel development is comprised of five parcels. The parcels to the north of Lodi Lane total 10.30 +/- acres and include APNs 022-130-023, -024, -027 and -028. These will be referred to as the north parcel. The 3.49 acre parcel to the south of Lodi Lane is APN 022-220-028. This, along with the adjoining 1.34 acre residential parcel, APN 022-220-029, will be referred to as the south parcel.

A non-transient, non-community water system currently exists on the north parcel, served by two on-site wells and a connection to City of St. Helena water.

> The Vineyard Well was drilled in 1996 by Doshier-Gregson Inc, on parcel 022-130-024. It has an annular seal of concrete to 50' and a 6" plastic casing to a depth of 425 feet. Water from this well is known to have high arsenic levels, and must be blended with water from other sources to reduce the arsenic concentration below the MCL.
>
> The Abbey Well was drilled in 1978 by Doshier-Gregson Inc, on parcel 022-130-027. It has an annular seal of grout to 35' and a 6" plastic casing to a depth of 300 feet. This well is known to have low capacity, and is dependent on the aquifer level.
>
> A third well, the Wilson Well, exists off-site on parcel 022-200-025. The Wilson Well is not connected to the public water system, but is plumbed to supplement the 300,000 gallon fire water tank on the North Parcel.

Water from the Vineyard Well is chlorinated, and routed to a blending system on parcel 022-130-023, where it is blended with water from the Abbey Well, and City of St. Helena to reduce the arsenic levels below the MCL. Blended water passes through a carbon filter and a 5-micron filter, and receives ozone treatment prior to entering the north parcel distribution system.

A separate transient, non-community water system exists on the south parcel, served by one well on the residential parcel.

> The Alumbaugh Well was drilled in 1997 by Pulliam Well Drilling, on parcel 022-220-029. It has an annular seal of cement to 50' and a 6" plastic casing to a depth of 400 feet. This well is known to have high levels of iron and manganese.
>
> A second well, the Old Well, exists on parcel 022-220-028, and is no longer used.

Water from the Alumbaugh well is routed to a treatment system on parcel 022-220-028, where it passes through iron & manganese filters. It receives chlorine treatment prior to entering the south parcel distribution system.

This project proposes to consolidate the two public water systems, to serve both the north and south parcels. The proposed consolidation includes connecting the Alumbaugh Well as a new water source for the north parcel public water system, re-using the existing north parcel treatment and blending system, and connecting the north and south parcel distribution systems. Iron and manganese filters will be added to the north parcel blending system, as needed. The existing south parcel treatment system will be abandoned. Treatment and testing will continue per the current schedule. No additional biological or chemical treatment will be performed on the well water unless testing results deem this treatment is necessary.

I.B. Projected Water Demand

The projected annual water demand including irrigation, winery process and domestic water is 21.79 af/yr, or 7.1 MG/yr. The north parcel currently has an agreement with the City of St. Helena for up to 2.7 MG/yr, reducing the demand on project wells to 4.4 MG/yr. The daily average well water demand is 12,055 gallons. Peak daily well water demand is estimated at 24,110 gallons per day being 200% of average daily demand.

I.C. Water Supply Capacity

The 2011 TMF Assessment and Technical Report for the north parcel estimates that the Vineyard Well can supply 40-gal/min. The TMF Report is on file at Napa County. The well will be capable of supporting the proposed peak daily well water demand of 24,110-gal/day.

40 gpm*1440 min/day = 57,600 gal/day > 24,110 gal/day

Vineyard Well water will be supplemented by water from the Abbey Well, Alumbaugh Well, and City of St. Helena, further reducing the demand.

I.D. Source Adequacy

All proposed well sources for the new consolidated public water system are currently in use as approved wells for their individual public water systems.

I.E. Water Quality

Water sampling of all wells and distribution systems are ongoing, per their current public water system requirements. Water quality for the consolidated public water system is expected to meet or exceed all requirements of Chapter 15 of Title 22, California Code of Regulations (CCR).

II. MANAGERIAL

II.A. General

The owner of the water system will be the property owner of the north parcel. The costs of operation will be covered in the facility operation costs. The owner will also hold the responsibility of water system manager for the property.

II.B. Operation and Maintenance

The following is a summary of the required Operations and Maintenance schedule:

Tasks	Frequency	Action
Wells, Tanks, Meters, & Valves	Weekly	Visual Inspection
Blending System	Weekly	Visual Inspection
Chlorination Reservoir	Weekly	Visual Inspection & Replenish
Water Quality Testing	Monthly	Sampling & Analysis per TMF Report
Water Quality Testing - Arsenic	Quarterly	Sampling & Analysis per TMF Report
System Review & Planning	Annual	Update Records, Plan Maintenance, Budget

A certified distribution operator or treatment operator (T1 level or above) as specified by Chapter 13 of Title 22 CCR will be contracted by the owner and will be responsible for system repairs.

II.C. Monitoring and Testing

Water quality testing will be conducted, if necessary, to comply with Chapter 15 of Title 22 of CCR. Samples will be taken to Caltest or approved laboratory for testing.

II.D. Financial

Below is a brief summary of the system's annual estimated financial capacity. Capital improvement costs, including installation of the new well, as well as the treatment and distribution systems, are estimated to be a one-time expense of $120,000, amortized over 20 years.

Capital Improvements: $6,000
Power: $2,000
Maintenance: $2,500
Water Quality Testing: $2,500
Total: $13,000
Projected Annual Gross Revenue: $23,414,000 (based on owner projections)
Annual Operating Costs: $5,853,500 (at 25% profit)
Percent of Total Operating Costs: 0.2%

Appendix J

Wastewater System Feasibility Report

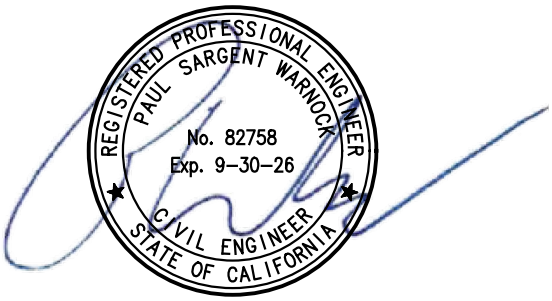
WASTEWATER FEASIBILITY REPORT

For

The Inn at the Abbey
3022 St. Helena Highway
St. Helena, CA 94574

APNs: 022-130-023, -024, -027, & -028
022-220-028, & -029

Prepared for:
Jackson Family Investments
1000 Alexander Mountain Road
Geyserville, CA 95441



Project #4111050.2
April 27, 2020
Revised: January 7, 2025

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252.4966.f

TABLE OF CONTENTS

I. INTRODUCTION 1
II. PROJECT OVERVIEW 1
III. DOMESTIC WASTEWATER FLOWS 1
IV. DOMESTIC WASTEWATER TO CWMS 3
V. DOMESTIC WASTEWATER TO EXISTING SOUTH PARCEL ONSITE SEPTIC SYSTEM 3
VI. OPTIONAL SOUTH PARCEL ALTERNATIVE SEWAGE TREATMENT SYSTEM (ASTS) 4
VI.A. Septic Tank 5
VI.B. Treatment Tank 5
VI. C. Pump Tank and Dispersal Field 5
VII. TREATED GREYWATER TO LANDSCAPE IRRIGATION 6
VIII. BIOMICROBICS GREYWATER SYSTEM 6
VIII.A. Settling Tank 6
VIII.B. Treatment Tank 6
VIII.C. UV Disinfection 6
VIII.D. Holding Tank and Dispersal Field 6
IX. WINERY PROCESS WASTEWATER CHARACTERISTICS 7
X. WINERY PROCESS WASTEWATER – SURFACE DRIP IRRIGATION 8
X.A. Septic Tank 8
X.B. Treatment Tank 8
X.C. Holding Tank and Dispersal Field 8
XI. OPERATION AND MAINTENANCE 9
XII. CONCLUSION 9

APPENDICES

1. VICINITY MAP, USGS SITE MAP, USDA SOILS MAPS AND INFORMATION (KSAT, ENGINEERING PROPERTIES, SOIL TYPES, AND DEPTH TO WATER TABLE)
2. CWMS WASTEWATER ALLOTMENT
3. WASTEWATER UTILITY PLAN, EXISTING AND PROPOSED CL USE OF AW LAND
4. DOMESTIC GREYWATER: WATER BALANCE FOR IRRIGATION AND STORAGE, IRRIGATION AREAS EXHIBIT
5. WINERY PROCESS WASTEWATER: WATER BALANCE FOR IRRIGATION AND STORAGE, IRRIGATION AREAS EXHIBIT
6. NAPA COUNTY UNIT RATE TABLE (TABLE 4)

I. INTRODUCTION

Jackson Family Investments is seeking a Use Permit for hotel use on the adjacent corners of Highway 29 and Lodi Lane in Saint Helena, California. The site of the proposed hotel development is comprised of five parcels. The parcels to the north of Lodi Lane total 10.30 ± acres and include APNs 022-130-023, -024, -027 and -028. These will be referred to as the north parcel. The 3.49 acre parcel to the south of Lodi Lane is APN 022-220-028. This, along with the adjoining 1.34-acre residential parcel, APN 022-220-029 will be referred to as the south parcel. See Appendix 1 for a vicinity map and a USGS map showing the site location.

The north parcel currently contains an existing stone building, winery, cottage, maintenance building, office, restaurant, and several outbuildings clustered to the north and west sides of the parcel. The southeast portion of the site is planted vineyards. The north parcel currently collects and conveys its wastewater to a Combined Wastewater Management System (CWMS). This system is located on Markham Vineyards property and is operated under a Waste Discharge Order approved by the San Francisco Regional Water Quality Control Board. The CWMS currently serves Markham Vineyards, Freemark Abbey, the Culinary Institute, and Wine Country Inn. The Freemark Abbey allocation under the CWMS is 4.0 MG/year.

The south parcel currently contains a 5-room motel and retail building, accessed from Lodi Lane, a 3-bedroom residence accessed from York Lane, and five residential units accessed from Lodi Lane. The south parcel commercial and residential buildings are served by on-site wastewater treatment systems. The existing Lodi Lane residential buildings are each served by separate, individual septic systems to remain, and are therefore excluded from our calculations.

This report evaluates the disposal of wastewater from the proposed hotel development both onsite and via the CWMS.

II. PROJECT OVERVIEW

The existing restaurant building on the north parcel (APN 022-130-021) will be demolished. The north portion of the proposed hotel will be constructed in its place, adjacent to the existing stone building and office.

The existing motel and retail building on the south parcel will be demolished. The south portion of the proposed hotel development will be constructed in their place, adjacent to Lodi Lane.

III. DOMESTIC WASTEWATER FLOWS

Domestic wastewater from the north parcel will be primarily disposed of through the Markham CWMS, supplemented by on-site greywater recycling, and is measured in millions of gallons per year (MG/yr). Wastewater from the south parcel will be treated and disposed of onsite, and is measured in gallons per day (GPD). The following is a summary of the estimated flows from the proposed hotel development.

NORTH PARCEL PEAK DOMESTIC WASTEWATER FLOWS

Use Description	Use Units	No. Units	Unit Rate Napa County Table 4 [gal/day/unit]	Total [gal/day]
Stone Building:				
Barrel Room (Event Space)	Meals	100	15	**1,500**
Dining & Bar				
- Wine Library (12 Seats)	Visitors	12	3	36
- Restaurant - Dining (150 Seats)	Meals	293	15	4,395
- Restaurant - Bar & Cocktail (29 Seats)	Meals	57	8	456
Subtotal Dining & Bar				**4,887**
Employees & Tasting				
- Stone Building Employees	Employees	10	15	150
- Tasting Room Visitors	Visitors	100	3	300
Subtotal Employees & Tasting				**450**
Hotel:				
Lodging (50 rooms)	Rooms	50	125	6,250
Pools Use (50 rooms)	Rooms	50	10	500
Laundry (North and South Parcels)[1]	Rooms	N/A	20	0
Subtotal Hotel				**6,750**
Winery Building:				
Winery				
- Tasting Room	Visitors	100	3	300
	Employees	15	15	225
Subtotal Winery Building				**525**
Office Building:				
Winery Storage and Office Building	Persons	35	15	**525**
Grand Total North Parcel				**14,637**

[1]Off-site laundry services will be utilized for the proposed project.

SOUTH PARCEL PEAK DOMESTIC WASTEWATER FLOWS

Use Description	Use Units	No. Units	Unit Rate [gal/day/unit]	Total [gal/day]	Greywater Percent	Greywater Total [gal/day]
Hotel Villas:						
Hotel						
- Lodging (23 rooms)	Rooms	23	125	2,875	91	2,616
- Casitas (6 rooms)	Rooms	6	125	750	91	683
- Pool Use (29 rooms)	Rooms	29	10	290	0	0
Meeting Space	Persons	20	3	60	33	20
Subtotal Hotel & Meeting Space				**3,975**		**3,319**
Residential:						
York Lane Residence	Bedrooms	3	120	**360**	0	**0**
Grand Total South Parcel				**4,335**		**3,319**

IV. DOMESTIC WASTEWATER TO CWMS

Freemark Abbey is permitted to send 4.0 MG/year wastewater to the CWMS. It is proposed that a portion of the domestic wastewater from the new hotel development on the north parcel, combined with the existing domestic wastewater flows, will be served by this CWMS. This equates to a proposed wastewater flow to the CWMS of 2.72 MG/year.

NORTH PARCEL ANNUAL DOMESTIC WASTEWATER FLOWS

Building - Use	Peak Flows (gal/day)	Occupancy/ Factor	Annual (MG/yr)
Stone Building			
- Barrel Room	1,500	0.45	0.25
- Dining & Bar	4,887	0.45	0.80
- Employees & Tasting	450	0.50	0.08
Hotel	6,750	0.70	1.73
Winery	525	0.55	0.10
Office	525	0.70	0.14
Total North Parcel Flows			**3.10**
North Parcel Greywater Recycling (minimum)			**0.38**
North Parcel Annual Flow to CWMS			**2.72**

See Appendix 2 for reference to the 2002 Markham Combined Wastewater Management System Evaluation report by Summit Engineering.

V. DOMESTIC WASTEWATER TO EXISTING SOUTH PARCEL ONSITE SEPTIC SYSTEM

Historically, uses in the CL-zoned areas of the south parcel have disposed of 2,485 GPD of wastewater in systems on the AW-zoned areas of the site. This legacy of shared wastewater disposal will be preserved with the new development. Wastewater from the new south parcel hotel will be distributed between the existing underground septic system and disposal to a new greywater treatment system. See Appendix 3 for existing and proposed wastewater plans.

The existing 5-room motel septic system will be abandoned. The existing 1,500 gpd septic system will be inspected by a qualified septic contractor and reused or replaced with a new septic system. This will serve an existing 3-bedroom residence (360 gpd), blackwater and a portion of the greywater from the proposed south parcel hotel and meeting space (1,140 gpd).

Greywater from the proposed south parcel hotel will be reclaimed for landscape irrigation (3,319 gpd). Dispersal will be divided between CL and AW-zoned areas, such that the total CL Wastewater to AW land (septic system + irrigation) will not exceed 2,485 GPD.

EXISTING SOUTH PARCEL CL WASTEWATER DISPOSAL

Use Description	Total Wastewater [gal/day]	Irrigation CL [gal/day]	Dispersal Field - AW [gal/day]	Irrigation AW [gal/day]	Total AW [gal/day]
Commercial:					
Motel (5-rooms)	625	-	625	-	625
Retail Building	1,500	-	1,500	-	1,500
Subtotal Motel & Retail:	**2,125**	**-**	**2,125**	**-**	**2,125**
Residential:					
York Lane Residence**	**360**	-	**360**	-	**360**
Grand Total South Parcel	**2,485**	**-**	**2,485**	**-**	**2,485**

**York Lane Residence included in AW total – previously located on CL land, with separate AW dispersal field.

PROPOSED SOUTH PARCEL CL WASTEWATER DISPOSAL

Use Description	Total Wastewater [gal/day]	Irrigation CL [gal/day]	Dispersal Field - AW [gal/day]	Irrigation AW [gal/day]	Total AW [gal/day]
Hotel Villas:					
Hotel					
- Hotel Blackwater	656	-	656	-	656
- Hotel Greywater	3,319	1,490	484	1,345	1,829
Subtotal Hotel & Meeting Space	**3,975**				
Residential:					
York Lane Residence**	**360**	**-**	****	-	****
Grand Total South Parcel	**4,335**	**1,490**	**1,140**	**1,345**	**2,485**

**York Lane Residence excluded from AW total – structure moved to AW land, shares 1,500 gpd dispersal field.

VI. OPTIONAL SOUTH PARCEL ALTERNATIVE SEWAGE TREATMENT SYSTEM (ASTS)

As noted in Section V above, the existing 1,500 gpd septic system on the South Parcel will either be reused or replaced with a new septic system. If a replacement system is desired, a new Alternative Sewage Treatment System (ASTS) will be provided to replace both the 1,500 gpd system serving the South Parcel Hotel and York Lane Residence, and the existing Lodi Lane residential buildings which are currently each served by separate, individual septic systems.

The existing Lodi Lane Residential buildings consist of five units on the eastern portion of the South Parcel (APN: 022-220-029). They total 12 bedrooms, for a total peak flow of 1,440 gpd (120 gpd/bedroom). When combined with the South Parcel Hotel and Lodi Lane Residence flows, the proposed replacement system will be sized to accommodate 2,940 gpd.

The treatment goal for subsurface dispersal is 30 mg/l BOD and 30 mg/l TSS. To meet this treatment goal a treatment train including a septic tank, treatment tank with an AdvanTex AX-100 pod, and pump tank are proposed. This treatment train was designed to meet the specifications of a Type 2 Standard AdvanTex System, for primarily black water waste. However, it may be modified for more desirable treatment processes prior to submitting construction plans. The following sections describe this process in more detail. This system is shown in Appendix 3.

VI.A. Septic Tank

The septic tank will provide primary treatment and serve to buffer peak flows and strengths from overwhelming the system and impairing treatment. This tank has been designed with baffles near the outlet. This tank will provide three days storage and will also serve to function as a primary settling basin. This tank will be 9,000 gallons.

An additional one day of storage (3,000 gallons) will be provided in a separate baffled chamber for use as a pre-anoxic tank, for a total septic tank size of 12,000 gallons.

VI.B. Treatment Tank

The treatment tank will serve to recirculate primary-treated effluent through an AdvanTex AX-100 textile media pod for secondary treatment. This tank will provide one day of storage, and will be 3,000 gallons.

VI. C. Pump Tank and Dispersal Field

Pre-treated effluent will be routed to a pump tank prior to dispersal. This pump tank will be sized to provide one day of storage above the high-water alarm per Napa County requirements. This tank will be 5,000 gallons. Effluent will be pumped to a Geoflow sub-surface drip dispersal field for disposal.

A site Evaluation was conducted on October 7, 2020 by Hogan Land Services and Napa County Environmental Health Department. A copy is included in Appendix 3. This Site Evaluation found suitable soil to a depth of 34 inches in test pits 3 and 4, with faint mottling observed at less than 24 inches deep. There was insufficient rainfall in the 2020-2021 water year to conduct direct groundwater observations. Direct groundwater observations resulting in a high groundwater elevation of 24 inches or deeper below existing grade will be required if this option is to be used. Alternately, 30 inches of suitable soil may be imported and allowed to naturalize, followed by new successful site evaluation.

VII. TREATED GREYWATER TO LANDSCAPE IRRIGATION

CPC Section 1501.7 establishes the NSF 350 requirements for greywater systems in jurisdictions with no local requirements for these systems. It is proposed that a portion of the greywater from the new hotel development will be treated on-site per NSF 350 standards. This treatment system will be by Biomicrobics or other suitable technology available at the time of construction to provide treatment. Treated greywater will be stored and re-used on-site as surface drip irrigation.

The total proposed area of CL infrastructure on AW land (inclusive of greywater landscape irrigation) will not exceed the total existing area of CL infrastructure on AW land. Refer to exhibits in Attachment 3.

VIII. BIOMICROBICS GREYWATER SYSTEM

The treatment goal established by NSF 350 is 10 mg/L BOD and 10 mg/L TSS. A treatment train including a settling tank, treatment tank with High Strength Membrane Bio-Reactor (HSMBR) unit, UV disinfection, and a holding/pump tank is proposed to meet the treatment goal. The preliminary tank sizing shown below is to serve the South Parcel. North Parcel tankage and irrigation will be proportional.

VIII.A. Settling Tank

The settling tank will serve to buffer peak flows and strengths from overwhelming the system and impairing treatment. This tank will provide 0.5-1 day of storage and will be 3,000 gallons.

VIII.B. Treatment Tank

The treatment tank will serve to treat peak greywater flows using a High Strength Membrane Bio-Reactor (HSMBR) unit. This tank will be 6,000 gallons.

VIII.C. UV Disinfection

Treated effluent will pass through a 5 micron filter and UV disinfection unit prior to storage.

VIII.D. Holding Tank and Dispersal Field

To provide a preliminary estimate of the storage volume required, we have prepared a monthly water balance, as shown in Appendix 4. Monthly greywater production is based on a percentage of the total annual greywater production. The amount of water allowed to be applied is estimated by the typical landscape water demand. The irrigation will be applied to areas of landscape outside well setback requirements. The area proposed for irrigation is 0.85 acres, as shown in Appendix 4. Based on the monthly analysis, 48,715 gallons storage is required.

During the summer months, all of the treated wastewater will be used for irrigation. During the wet winter months, a limited discharge will be consistent with landscape water demand and no discharge will occur within 48-hours of a forecasted rain event and also for 48-hours after a rain event. These irrigation scheduling constraints necessitate installing a tank to store excess water that cannot be discharged during wet weather. All stored water will then be used for irrigation during the dry periods. A storage tank with a capacity of 50,000 gallons will be provided.

A high-water alarm and emergency overflow to the domestic wastewater system will be provided on the greywater settling tank and treated greywater storage tank.

IX. WINERY PROCESS WASTEWATER CHARACTERISTICS

The following is a summary of the winery wastewater characteristics:

Wine Production: 60,000 gallons of wine per year
2.38 gallons of wine per case
25,210 cases/year

Wastewater Production: 5 gallons of wastewater/gallon of wine
300,000 gallons/year

Peak Daily Waste Water Flow: Crush Period = 60 days
Annual wine production x 1.5 / 60
1,500 gallons/day

Average Daily Flow: 300,000/365 = 822 gallons/day

Monthly Wastewater Flows:

TABLE 1

	% By Month	Waste/Month	
Sep	12%	36,000	Gal/Month
Oct	10%	30,000	Gal/Month
Nov	5%	15,000	Gal/Month
Dec	5%	15,000	Gal/Month
Jan	4%	12,000	Gal/Month
Feb	4%	12,000	Gal/Month
Mar	6%	18,000	Gal/Month
Apr	8%	24,000	Gal/Month
May	10%	30,000	Gal/Month
Jun	12%	36,000	Gal/Month
Jul	12%	36,000	Gal/Month
Aug	12%	36,000	Gal/Month
Totals	100%	300,000	Gal/Year

X. WINERY PROCESS WASTEWATER – SURFACE DRIP IRRIGATION

According to Napa County Environmental Management Sewage Treatment System Design Guidelines, winery process wastewater must be treated prior to surface discharge. Based on our experience, winery wastewater characteristics are as follows:

Characteristics	Units	Average
pH		3.5
BOD^5	mg/l	6000
TSS	mg/l	500
Nitrogen	mg/l	20
Phosphorus	mg/l	10

The treatment goal for surface drip dispersal is 160 mg/l BOD and 80 mg/l TSS. To meet this treatment goal a treatment train including a septic tank, treatment tank with High Strength Membrane Bio-Reactor (HSMBR) unit, and pump tank are proposed. This treatment train may be modified for more desirable treatment processes prior to submitting construction plans. The following sections describe this process in more detail. This system is shown in Appendix 3.

X.A. Septic Tank

The septic tank will serve to buffer peak flows and strengths from overwhelming the system and impairing treatment. This tank has been designed with baffles near the outlet. This tank will provide three days storage and will also serve to function as a primary settling basin. This tank will be 5,000 gallons.

X.B. Treatment Tank

The treatment tank will serve to treat wastewater flows using a High Strength Membrane Bio-Reactor (HSMBR) unit. This tank will provide ten days storage. This tank will be 15,000 gallons.

X.C. Holding Tank and Dispersal Field

To provide a preliminary estimate of the amount of storage tanks required, we have prepared a monthly water balance, as shown in Appendix 5. Monthly wastewater production is based on a percentage of the total annual wastewater production. The amount of water allowed to be applied is estimated by the typical vine water demand. The irrigation will be applied to areas of vineyards outside well setback requirements. The area available for irrigation is shown in Appendix 5. An area of 1.79 acres of vineyard and 1.79 acres of cover crop has been used to calculate the storage capacity required. Based on monthly analysis no storage is required. Storage capacity of 20,000 gallons will be provided for treated process wastewater generated during wet weather periods.

During the summer months, all of the treated wastewater will be used for irrigation. During the wet winter months, a limited discharge will be consistent with landscape water demand and no discharge will occur within 48-hours of a forecasted rain event and also for 48-hours after a rain event. These irrigation scheduling constraints necessitate installing tanks to store excess water that cannot be discharged during wet weather. All stored water will then be used for irrigation during the dry periods.

XI. OPERATION AND MAINTENANCE

The process and domestic wastewater systems will be fully automated and will be designed so that minimal input from winery or hotel staff is required. Per Napa County guidelines, a Registered Civil Engineer, Registered Environmental Health Specialist, or Licensed Contractor will provide semi-annual monitoring and evaluation of the systems permitted through Napa County. The contract with the responsible party will be provided before the final inspection for the system installed. The North Parcel sanitary sewer system associated with the CWMS will continue to be monitored per the Waste Discharge Requirements issued by the Regional Water Quality Control Board.

XII. CONCLUSION

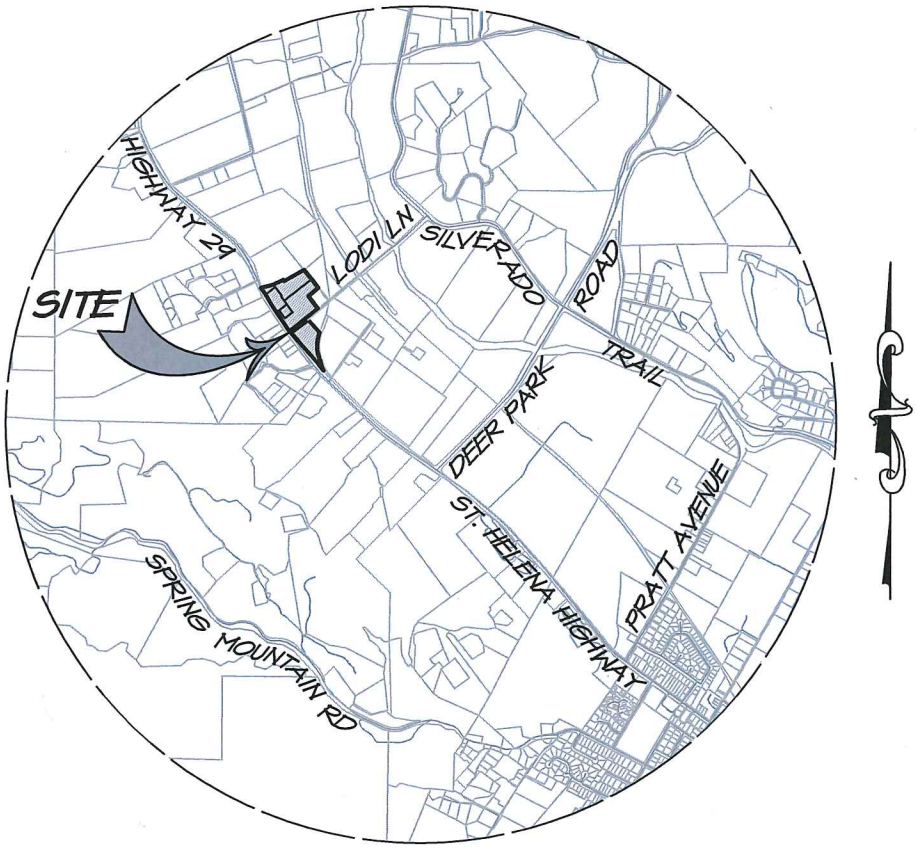
This report demonstrates that sufficient capacity exists within the CWMS and on-site drain fields to dispose of domestic wastewater from the proposed project, with the addition of on-site treatment systems for greywater and winery process wastewater, and an optional replacement system for South Parcel domestic wastewater.

The above methodology results in a design that meets the Napa County Environmental Management Design standards for the treatment of domestic wastewater and winery process wastewater, and the NSF-350 standards for the treatment of greywater.

APPENDIX 1

Vicinity Map, USGS Site Map, USDA Soils Maps and Information (KSAT, Engineering Properties, Soil Types and Depth to Water Table)

FREEMARK ABBEY
VICINITY MAP
NAPA COUNTY CALIFORNIA



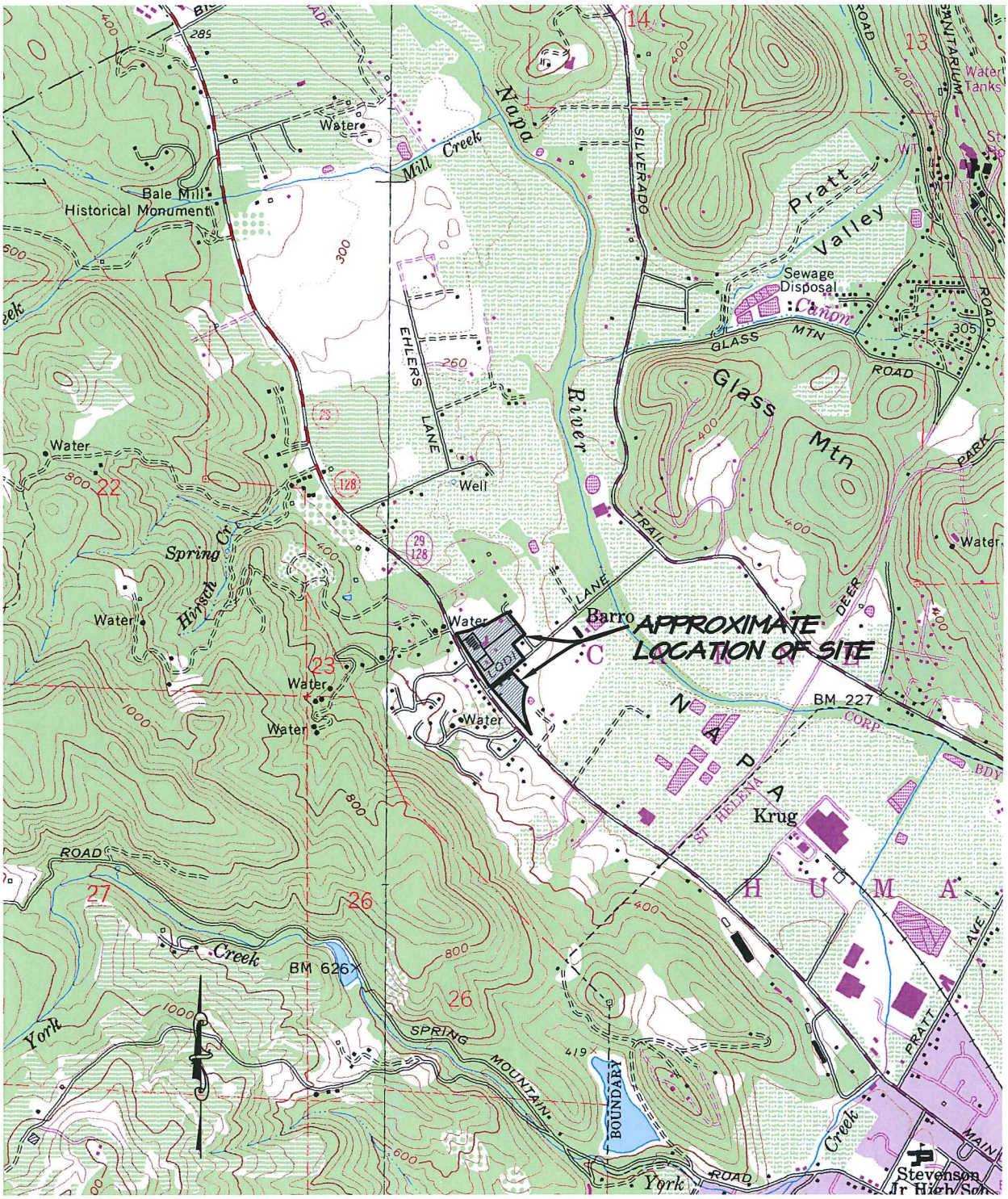
VICINITY MAP
SCALE: 1" = 3,000'

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

AUGUST 11, 2017 4111050.2 Exh-Vicinity Map.dwg

FREEMARK ABBEY
USGS MAP


APPROXIMATE LOCATION OF SITE
Napa River
Mill Creek
Spring Creek
York Creek
Pratt Valley
Glass Mtn
Glass Mtn Road
Silverado Trail
Ehlers Lane
Spring Mountain Road
St Helena
Napa
Yountville
Rutherford
Oakville
Krug
Barrel
Deer Park
Bale Mill
Historical Monument
Sewage Disposal
Water Tanks
Well
BM 626
BM 227
Stevenson Jr High Sch
Water
Water
Water

Saturated Hydraulic Conductivity (Ksat)—Napa County, California
(Saturated Hydraulic Conductivity - Freemark Abbey)

Map Scale: 1:3,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 7.7955

> 7.7955 and <= 8.7871

> 8.7871 and <= 9.0000

Not rated or not available

Soil Rating Lines

<= 7.7955

> 7.7955 and <= 8.7871

> 8.7871 and <= 9.0000

Not rated or not available

Soil Rating Points

<= 7.7955

> 7.7955 and <= 8.7871

> 8.7871 and <= 9.0000

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 12, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2019—Apr 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
104	Bale clay loam, 0 to 2 percent slopes	9.0000	0.0	0.0%
168	Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14	7.7955	3.2	16.1%
169	Perkins gravelly loam, 5 to 9 percent slopes	8.7871	16.6	83.9%
Totals for Area of Interest			**19.8**	**100.0%**

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 30

Units of Measure: Inches

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Napa County, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
104—Bale clay loam, 0 to 2 percent slopes														
Bale	85	B	0-24	Clay loam	CL, SC	A-6, A-7	0- 0- 0	0- 0- 0	80-90-100	80-90-100	70-85-100	30-55-80	30-40-50	10-18-25
			24-60	Stratified gravelly sandy loam to loam	SM	A-4	0- 0- 0	0- 0- 0	80-85-90	70-75-80	60-65-70	35-43-50	15-18-20	NP-3 -5

Engineering Properties–Napa County, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
168—Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14														
Perkins	85	B	0-7	Gravelly loam	SC	A-6	0- 0- 0	0- 0- 0	75-84-88	50-68-75	43-61-74	31-44-55	27-32-41	9-13-19
			7-19	Gravelly loam	SC	A-6	0- 0- 0	0- 0- 0	75-81-88	51-63-76	44-56-73	32-41-55	29-31-39	12-13-19
			19-29	Gravelly loam, gravelly clay loam	SC	A-6	0- 0- 0	0- 0- 0	85-85-88	69-69-76	60-62-76	44-46-60	31-34-46	13-15-25
			29-44	Gravelly clay loam, gravelly loam	CL	A-6	0- 0- 0	0- 0- 0	85-85-88	69-69-76	59-63-76	46-50-62	32-39-48	15-20-26
			44-57	Gravelly clay loam, gravelly loam	CL	A-6	0- 0- 0	0- 0- 0	85-85-89	71-71-77	59-64-77	46-51-62	32-39-47	15-20-26
			57-60	Gravelly loam, very gravelly loam	SC	A-6	0- 0- 0	0- 0- 0	74-79-89	47-58-77	40-52-73	29-38-55	28-32-37	12-15-19
169—Perkins gravelly loam, 5 to 9 percent slopes														
Perkins	85	C	0-29	Gravelly loam	GC-GM, SC-SM	A-2, A-4	0- 0- 0	0- 0- 0	60-73-85	55-63-70	35-50-65	20-35-50	25-28-30	5-8 -10
			29-60	Gravelly loam, gravelly clay loam	CL, SC	A-6, A-7	0- 0- 0	0- 5- 10	60-73-85	50-60-70	45-58-70	35-48-60	35-43-50	15-20-25

Data Source Information

Soil Survey Area: Napa County, California
Survey Area Data: Version 12, Sep 16, 2019

Component Text Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the selected area. The component descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit. A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the associated soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas (components) for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The "Map Unit Component Nontechnical Descriptions" report gives a brief, general description of the soil components that occur in a map unit. Descriptions of nonsoil (miscellaneous areas) and minor map unit components may or may not be included. This description is written by the local soil scientists responsible for the respective soil survey area data. A more detailed description can be generated by the "Map Unit Description" report.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Component Text Descriptions

Napa County, California

Map Unit: 104—Bale clay loam, 0 to 2 percent slopes

Description Category: GENSOIL

Bale: 85 percent

The Bale component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on alluvial fans, flood plains. The parent material consists of alluvium derived from rhyolite and/or alluvium derived from igneous rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. Irrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Description Category: GENSOIL

Clear lake: 3 percent

Generated brief soil descriptions are created for major soil components. The Clear Lake soil is a minor component.

Map Unit: 168—Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14

Description Category: GENSOIL

Perkins: 85 percent

The Perkins component makes up 85 percent of the map unit. Slopes are 1 to 10 percent. This component is on stream terraces on valleys, fan remnants on valleys. The parent material consists of alluvium derived from volcanic and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Description Category: GENSOIL

Haire: 5 percent

Generated brief soil descriptions are created for major soil components. The Haire soil is a minor component.

Description Category: GENSOIL

Coombs: 5 percent

Generated brief soil descriptions are created for major soil components. The Coombs soil is a minor component.

Description Category: GENSOIL

Bale: 5 percent

Generated brief soil descriptions are created for major soil components. The Bale soil is a minor component.

Map Unit: 169—Perkins gravelly loam, 5 to 9 percent slopes

Description Category: GENSOIL

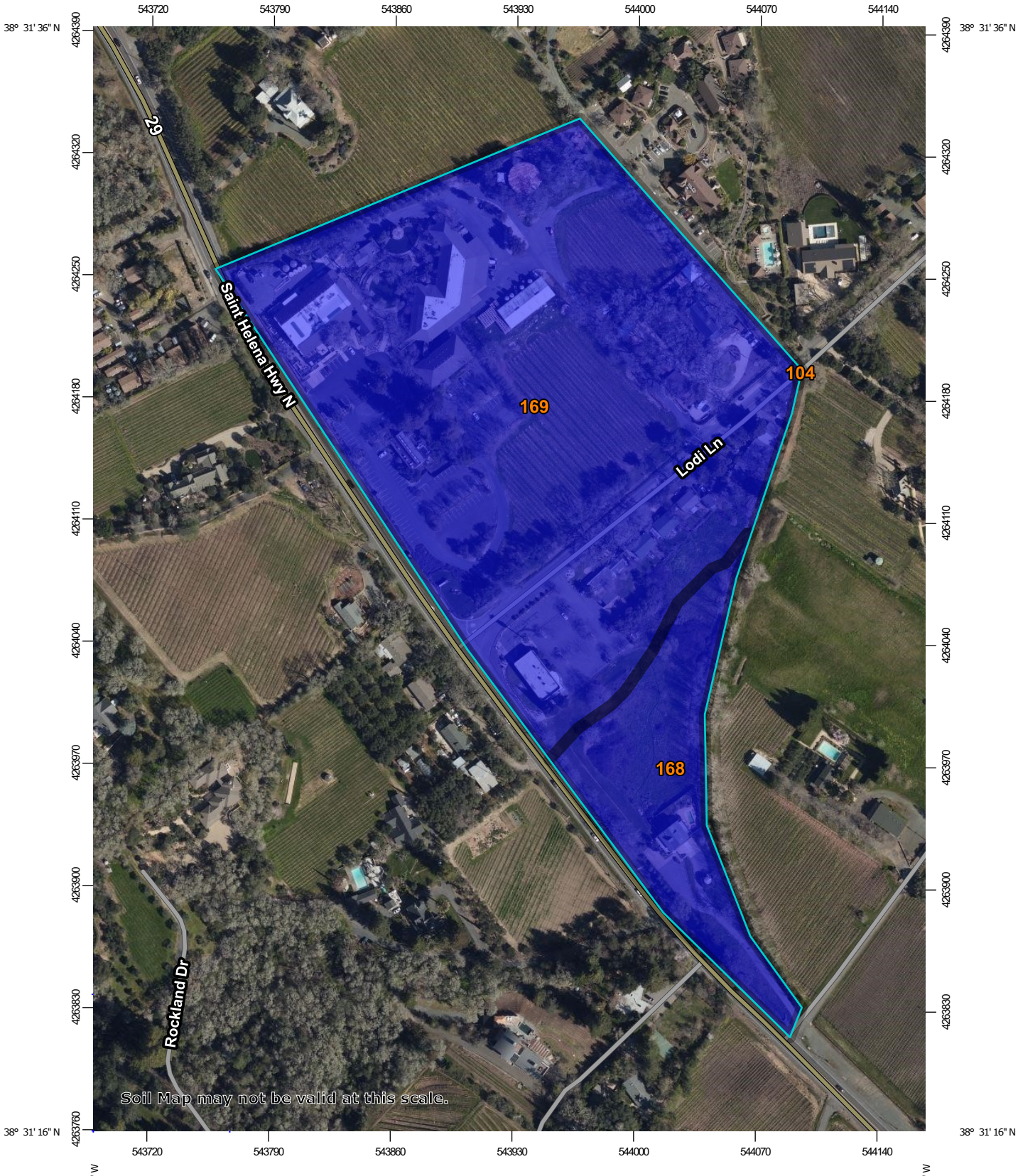
Perkins: 85 percent

The Perkins component makes up 85 percent of the map unit. Slopes are 5 to 9 percent. This component is on terraces. The parent material consists of alluvium derived from igneous rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Data Source Information

Soil Survey Area: Napa County, California
Survey Area Data: Version 12, Sep 16, 2019

Depth to Water Table—Napa County, California
(Depth To Water Table - Freemark Abbey)



Map Scale: 1:3,090 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 12, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2019—Apr 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
104	Bale clay loam, 0 to 2 percent slopes	153	0.0	0.0%
168	Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14	>200	3.2	16.1%
169	Perkins gravelly loam, 5 to 9 percent slopes	>200	16.6	83.9%
Totals for Area of Interest			**19.8**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Component" returns the attribute value associated with the component with the highest percent composition in the map unit. If more than one component shares the highest percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher attribute value should be returned in the case of a percent composition tie. The result returned by this aggregation method may or may not represent the dominant condition throughout the map unit.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Interpret Nulls as Zero: No

This option indicates if a null value for a component should be converted to zero before aggregation occurs. This will be done only if a map unit has at least one component where this value is not null.

Beginning Month: January

Ending Month: December

APPENDIX 2

CWMS Wastewater Allotment

FREEMARK ABBEY COMPLEX (including Brava Restaurant & Silverado Brewery)

TOTAL ANNUAL WASTEWATER FLOW

Freemark Abbey Winery	1.58 Mgal/yr
Silverado Brewery	0.82 Mgal/yr
Brava Restaurant	0.62 Mgal/yr
Subtotal	3.02 Mgal/yr
Inflow and Infiltration @ 33 percent	1.00 Mgal/yr
Total	4.02 Mgal/yr

Use 4.0 Mgal/yr

CULINARY INSTITUTE OF AMERICA

The Culinary Institute of America is proposing an expansion to the restaurant, dormitories and renovations to the still house. More detailed information is available in the Culinary Institute of America Water and Wastewater Phase I Projection, issued on January 14, 2002 by Summit Engineering Inc., supporting calculations of which are provided as an attachment to this document.

SANITARY WASTEWATER

Average Day

From CIA Projections = 7.7 Mgal/yr

WINE COUNTRY INN

The current renovation is not anticipated to increase the wastewater flows. In order to provide for potential increased occupancy in the future, potential future development of a spa and past meter inaccuracies, the SW flows from Wine Country Inn (WCI) are *projected* to be 10 percent greater than the historic peak annual flow.

Projected Annual SW Flow = Historic Peak Annual SW Flow x 110%
= 1.087 Mgal/yr x 110%
= 1.20 Mgal/yr SW

EXISTING COMBINED WASTEWATER MANAGEMENT SYSTEM

The existing CWMS currently treats combined SS and PW flows from Markham Vineyards and Freemark Abbey. The CIA and WCI, contribute SS flows only. The permitted discharge capacity is 16.07 million gallons per year. This total permitted capacity is allocated to each facility as follows:

TABLE 1 USER PERMITTED DISCHARGE CAPACITY

USER	Total (Mgpy)
Wine Country Inn (WCI)	1.2
Freemark Abbey Complex[1]	4.0
Markham Vineyards	2.4
Culinary Institute – Greystone (CIA)	7.7
5% contingency allocation	*0.77*
TOTAL	16.07

Each USER facility includes various pretreatment systems to assist in reduction of solids and organic concentration of the wastewater delivered to the CWMS, as shown in the Combined Wastewater System Schematic, presented in Enclosure A. After pretreatment, the combined wastewater enters the existing wastewater treatment pond (Pond) No. 1 for aerobic biological treatment. Pond No. 1 has an existing treatment capacity of 3.1 Mgal and currently includes 35 horsepower (Hp) of brush aeration and 15 Hp of vertical turbine aeration. Effluent from Pond No. 1 flows into Pond No. 2 for additional treatment polishing and storage. Pond No. 2 has an existing capacity of 7.2 Mgal and currently includes 56 Hp of vertical turbine aeration.

After secondary treatment in Ponds No. 1 and 2, filtration and disinfection occurs prior to transfer to the storage Ponds No. 3A and 3B. Filtration is performed by an inline spin clean filter. Disinfection occurs using hypochlorite at the chlorine contact chambers located between Ponds No. 2 and 3A. The disinfected recycled water is stored in Ponds No. 3A and 3B and subsequently disposed via the south irrigation disposal system to the 14.9 acres of vineyard, located south of Ponds No. 3A and 3B. During warmer months (high evapotranspiration months) disinfected secondary-23 water is also disposed via the 2.6-acre evaporation ponds. A pressure sand filter and disinfection system (north disinfection and irrigation disposal system) allows for disposal of wastewater from Pond No. 2 to the 7.7-acre vineyards north of Pond No. 1. The total existing vineyard disposal area is 22.6 acres.

At peak discharge capacity, the following is a summary of the existing wastewater treatment pond layout, including existing aeration and hydraulic retention time (HRT), at the permitted discharge capacity:

[1] Wastewater flows from Freemark Abby include a 33% allocation from Inflow and Infiltration in the CWMS.

APPENDIX 3

Wastewater Utility Plan
Existing and Proposed CL Use of AW Land
Site Evaluation Report

Apt '22-220-01

Merle Meyers

Lodi Lane & Hwy 29

MOTEL SEPTIC FIELD
(5 BR)(150 GAL/BR/DAY) = 750 GPD = 0.27 MG/YR

HOUSE SEPTIC FIELD
(2 BR)(150 GAL/BR/DAY) = 300 GPD = 0.11 MG/YR

RESTAURANT SEPTIC FIELD
1,500 GPD = 0.55 MG/YR

TOTAL = 0.93 MG/YR

"AS-BUILT"

OLD S.P.RR. ℄ R/W

MOTEL SEPTIC FIELD

HOUSE SEPTIC FIELD

TO WELL 209'+

DAYLIGHT

60'

100'

110'

10'

FRENCH DRAIN 4'+ DEEP

NEW SYSTEM INSTALLED 5/23/85

80'

55'

1500 GAL. TANK

36'

2200 GAL TANK

DIST. BOX

100'+

55'

9'

18'

20'

50'

10'

800 GAL TANK

5'

810 GAL TANK

21'

17'

30'

4" SEWER LINE TO BIG WHITE HOUSE ON CORNER

2-BEDROOM HOUSE & COMMERCIAL BUILDING

5-BEDROOM MOTEL

1964 810 tank 5X48LF

12'

9'

2 B.R. DUPLEX

2 BR.

GARAGE

GARAGE

1 B.R. HOUSE

1 B.R. CABIN

1 B.R. CABIN

1 B.R.

4 B.R.

LODI LANE

7-14-86

LODI LANE

ST. HELENA HWY

COMMERCIAL BUILDING

2-BEDROOM HOUSE

5-BEDROOM MOTEL

COMMERCIAL BLDG.

3 B.R. HOUSE

5-plex

220'

SEWER

TANK

B.R.

B.R.

B.R.

TANK

TANK

DUPLEX 2 BR.

TANK

LEACH FIELD

75'

DIST. BOX

VERY LARGE TANK

2-BEDROOM HOUSE SEPTIC FIELD

SEE OTHER AS BUILT PLANS IN FILE

FRENCH DRAIN AS PER MCHD.

100'

100'

120'

100'

100'

100'

100'

100'

Merle Meyer 963-2882

300'±

Well

MOTEL SEPTIC FIELD

9-26-86 (78)

THIS IS the AREA that the NEW system for the RESTAURANT NEEDS to be INSTALLED AS per NAT. NST has been told. I have LEFT A couple of messages for Merle Meyer, but she has not CALLED BACK YET.

COMMERCIAL BUILDING / RESTAURANT

2-BEDROOM HOUSE

5-BEDROOM MOTEL

2-BEDROOM HOUSE SEPTIC FIELD NOT SHOWN

MOTEL SEPTIC FIELD

HIGHWAY 29

LODI LANE

STATE

ABANDONED

RAILROAD

PROPOSED RESTAURANT

BUILDING (ANTIQUE SHOP)

ALTERNATE PRIMARY OR RESERVE AREA 7000 SQ. FT. ±

PRIMARY DRAINFIELD AREA

RESERVE AREA

EX. FRENCH DRAIN

INV 255.0? INTERCEPT EX. FR. DRAIN EXISTING DRAINFIELD

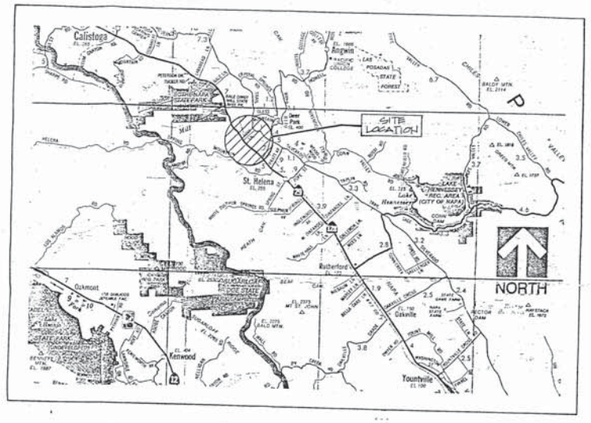
RESERVE AREA FOR EXISTING DRAINFIELDS

RIGHT OF WAY LINE

PROPERTY LINE

AS BUILT
NOT-TO-SCALE
(USE DIMENSIONS)

FEASIBILITY STUDY FOR USE PERMIT
PROPOSED RESTAURANT W/ EX. RESIDENTIAL UNITS

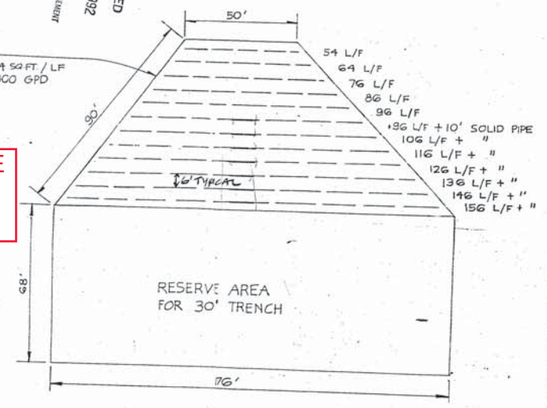


VICINITY MAP
NOT TO SCALE

RECEIVED
JUN 22 1992
DEPT OF ENVIRONMENTAL MANAGEMENT

PRIMARY AREA
30" TRENCH AT 4.5 SQ FT / LF
X 1250 L/F = 5000 GPD CAPACITY

4" & 6" PIPE



DRAINFIELD FOR RESTAURANT
SCALE 1"=30'

500 MEALS/DAY @ 2.6 GPC = 1300 GAL/DAY
10 EMPLOYEES @ 20 GPCD = 200 GAL/DAY
DISCHARGE RATE = 1500 GAL/DAY
= EQUIVALENT OF 10 BEDROOMS
@ 2+ INCHES/HR PERCOLATION, REQUIRED
LEICHLINE SIDEWALL AREA = 10 X 500 = 5000 SQ.FT.
= 250 L/F OF 36" TRENCH WITH 24" SIDEWALL
OR 1667 L/F OF 30" TRENCH WITH 18" SIDEWALL

180 over
12 under

1667 LF

REGISTERED

STAMP

DATE	June 1992	BOOK	195
DRAWN	RAY	PAGE	68-75
DESIGNED	KCD	FILE	Napa
CHECKED	WSA	JOB NO.	
PROJ. MGR.	KCD	SCALE	1" 40'
SIGNED:		R.C.E. 17016	

NO. BY DATE

OR:

MERLE MEYER
1159 LODI LANE
ST. HELENA, CALIFORNIA

Northpoint Engineers, Inc
Civil Engineers
Land Planers
Surveyors
2118 Sacramento St.
Vallejo, California
94590
(707) 643-6431

TOPOGRAPHICAL SURVEY
A.P.N. 22-220-01
1159 LODI LANE, ST. HELENA, CALIFORNIA
FOR: MERLE MEYER
ST. HELENA CALIFORNIA

SHEET 1 1 SHEETS

JACKSON FAMILY INVESTMENTS

(E) ALLMEAUGH WELL

MATCH LINE - SEE BELOW

ASSUMED LOCATION OF WELL SUPPLY LINE TO DW TANK TO BE ABANDONED

(E) DW TANK TO BE ABANDONED

IRON & MANGANESE FILTERS

CHLORINE TREATMENT TANK

10,000 GAL DW TANK

RES 1

(E) DEDICATED CITY OF ST. HELENA WATER SERVICE RES 1 ONLY

ASSUMED LOCATION OF DW LINE FROM DW TANK TO BE ABANDONED

CONNECT TO (E) WELL WATER

REDUCED PRESSURE BACKFLOW PREVENTER

CAP & ABANDON (E) WELL SUPPLY LINE TO DW TANK

RES 5 & 6

RES 4

RES 3

RES 2

CAP & ABANDON (E) DW LINE FROM DW TANK

TO AMEN VINEYARD IRRIGATION & LINES TO 3 VINEYARD BLDGS

WILSON WELL TO ADJACENT PROPERTY

STEEL TANK TO IRRIGATION

RED 6V FROM VINEYARD WELL

(2) BLACK 6VA FROM WILSON WELL

VINEYARD WELL & STEEL TANK TO IRRIGATION

2" WELL WATER TO BLENDING SYSTEM

FROM WILSON WELL

H3 / ETE WASH

MAINT. BLDG

FREEMARK ABBEY WINERY

(E) VINEYARD WELL

OFFICE

(E) DW BLENDING SYSTEM

BUILDING 1

(E) ABBY WELL

BUILDING 2

S.L.A.D. FOR CONTINUATION

BUILDING 5

BUILDING 6

APPROXIMATE ZONING LINE

BLDG 5

BUILDING 4

(4) FDC / PIV

BUILDING 3

MATCH LINE SEE ABOVE

ASSUMED LOCATION OF WELL SUPPLY LINE TO DW TANK TO BE ABANDONED

ASSUMED LOCATION OF DW LINE FROM DW TANK TO BE ABANDONED

CAP & ABANDON (E) DW LINE TO RESIDENCES 2-6

CAP & ABANDON (E) CITY WATER SERVICE TO BLENDING SYSTEM - REROUTE CITY WATER SERVICE TO SERVE NORTH PARCEL HOTEL ONLY

RELOCATE (E) CITY WATER METER AND REDUCED PRESSURE BACKFLOW PREVENTER

CONNECT TO (E) 4" IW

CONNECT TO (E) 4" DW

CONNECT TO (E) 8" FW

WATER VAULT

GRAPHIC SCALE

40 0 40 80

(IN FEET)
1 inch = 40 FT

NOTE

NORTH PARCEL INTERNAL PROPERTY LINES NOT SHOWN FOR CLARITY.

REGISTERED PROFESSIONAL ENGINEER PAUL SARGENT WARNICK No. 82758 Exp: 9-30-22 CIVIL ENGINEER STATE OF CALIFORNIA

THE INN AT THE ABBEY Est. 1886

C4.1 - UTILITY PLAN - WATER

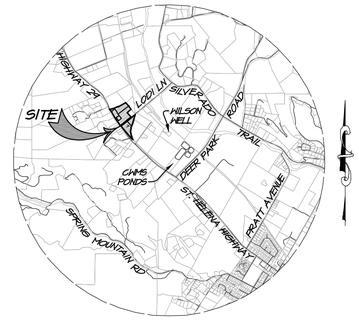
PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION JANUARY 2022

RSA* Job #: 4111050.2
Drawn: JFW/LMM Design: PSW

R:\2011\4111050.2-Freemark_Abbey_Development_Plans_DR\permits\DRB\CAD\Utility.dwg 02/15/2022 8:26:29 AM lmahjorn COPYRIGHT RSA+

JACKSON
FAMILY
INVESTMENTS



VICINITY MAP
SCALE: 1" = 3,000'

GRAPHIC SCALE
60 0 60 120
(IN FEET)
1 inch = 60 FT

LEGEND

- GL ZONING
- EXISTING
- PROPOSED

SOUTH PARCEL

ITEM	EXISTING (SF)
BUILDINGS	-
ACCESS & PARKING	-
UTILITIES (WELLS, TANKS, LEACH FIELDS, ETC.)	71,464
TOTAL AREA	71,464

REGISTERED PROFESSIONAL ENGINEER
PAUL SARGENT WARWICK
No. 82758
Exp. 9-30-22
CIVIL ENGINEER
STATE OF CALIFORNIA

THE INN
Est. 1886
AT THE ABBEY

EXISTING CL USE

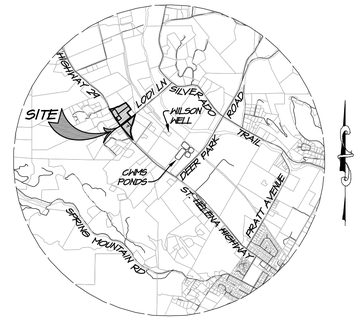
PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION JANUARY 2022

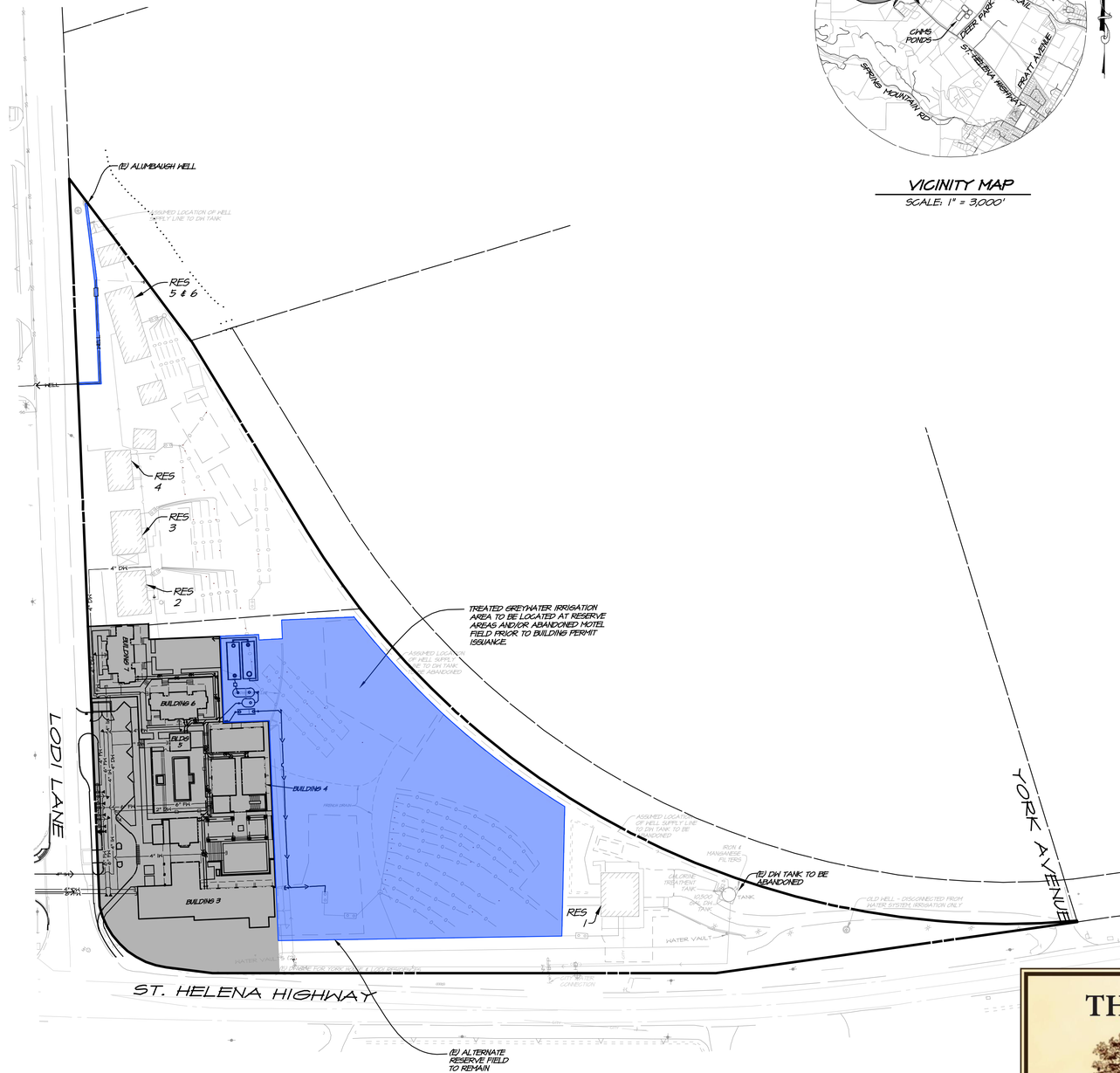
RSA+ Job #: 41111050.2
Drawn: JFW/LMM Design: PSW

R:\2011\41111050.5_Fremont&_Abbey_Development_Due_Diligence\DESIGN\EXHIBITS\Exh-CL_AW Jan-Dwg 02/15/2022 10:44:18 AM timlgrom COPYRIGHT RSA+

JACKSON
FAMILY
INVESTMENTS



VICINITY MAP
SCALE: 1" = 3,000'



GRAPHIC SCALE
60 0 60 120
(IN FEET)
1 inch = 60 FT

LEGEND

- GL ZONING
- EXISTING
- PROPOSED

SOUTH PARCEL

ITEM	EXISTING (SF)	PROPOSED (SF)
BUILDINGS	–	–
ACCESS & PARKING	–	–
UTILITIES (WELLS, TANKS, LEACH FIELDS, ETC.)	71,464	69,162
TOTAL AREA	71,464	69,162
NET GL USE		-2302

REGISTERED PROFESSIONAL ENGINEER
PAUL SARGENT WARWICK
No. 82758
Exp. 9-30-22
CIVIL ENGINEER
STATE OF CALIFORNIA

THE INN
Est. 1886
AT THE ABBEY

PROPOSED CL USE

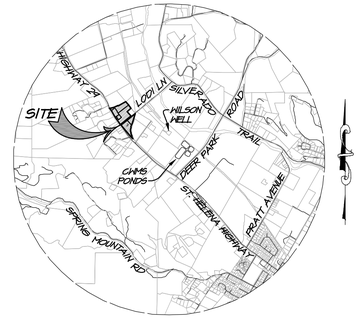
PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION JANUARY 2022

RSA+ Job #: 41111050.2
Drawn: JFW/LMM Design: PSW

R:\2011\41111050.5_Fremont_&_Abbey_Development_Dvlp_D\Egencon\DESIGN\EXHIBITS\Exh-CL_AW_Jan.dwg 02/15/2022 10:45:39AM lmillgrom COPYRIGHT RSA+

JACKSON
FAMILY
INVESTMENTS



VICINITY MAP
SCALE: 1" = 3,000'

GRAPHIC SCALE
60 0 60 120
(IN FEET)
1 inch = 60 FT

LEGEND

- CL ZONING
- EXISTING
- PROPOSED

SOUTH PARCEL

ITEM	EXISTING (SF)	PROPOSED (SF)
BUILDINGS	-	-
ACCESS & PARKING	-	-
UTILITIES (WELLS, TANKS, LEACH FIELDS, ETC.)	11,464	52,122
TOTAL AREA	11,464	52,122
NET CL USE		-9,342

REGISTERED PROFESSIONAL ENGINEER
PAUL SARGENT WARNICK
No. 82758
Exp. 9-30-22
CIVIL ENGINEER
STATE OF CALIFORNIA

THE INN
Est. 1886
AT THE ABBEY

PROPOSED CL USE
WITH OPTIONAL GEOFLOW FIELD
PRELIMINARY - NOT FOR CONSTRUCTION

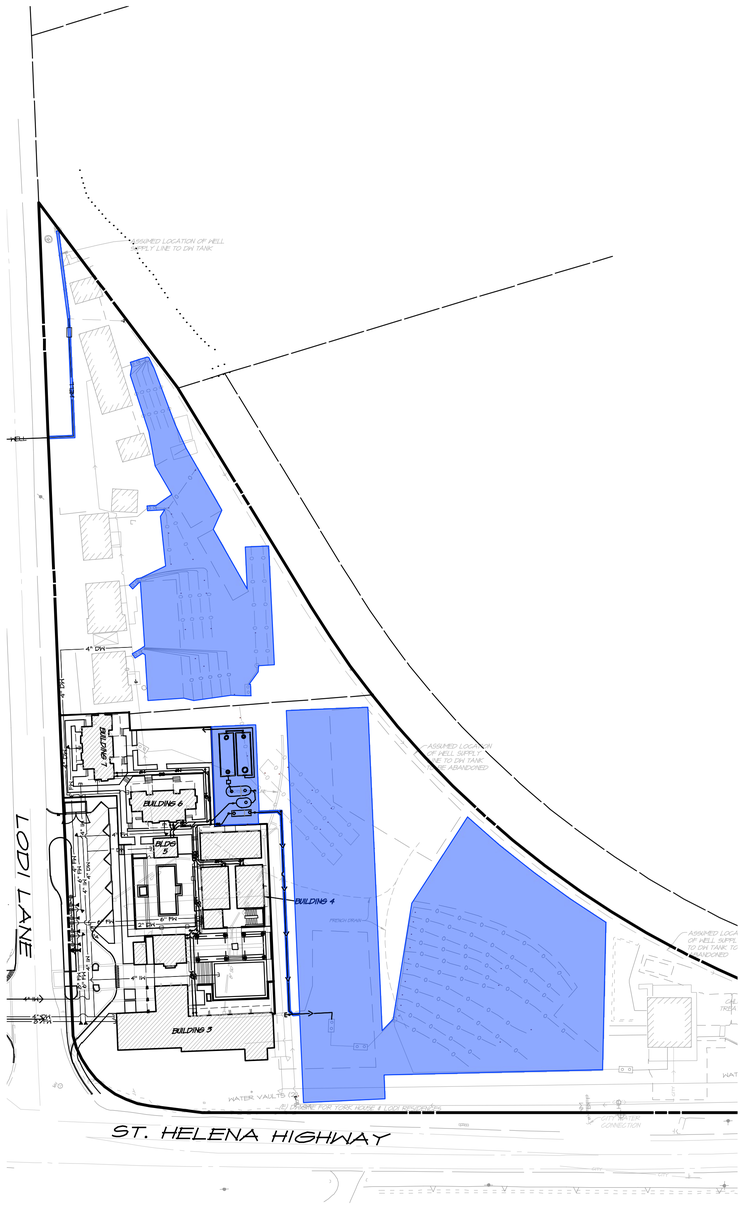
USE PERMIT APPLICATION JANUARY 2022

RSA+ Job #: 41111050.2
Drawn: JFW/LMM Design: PSW

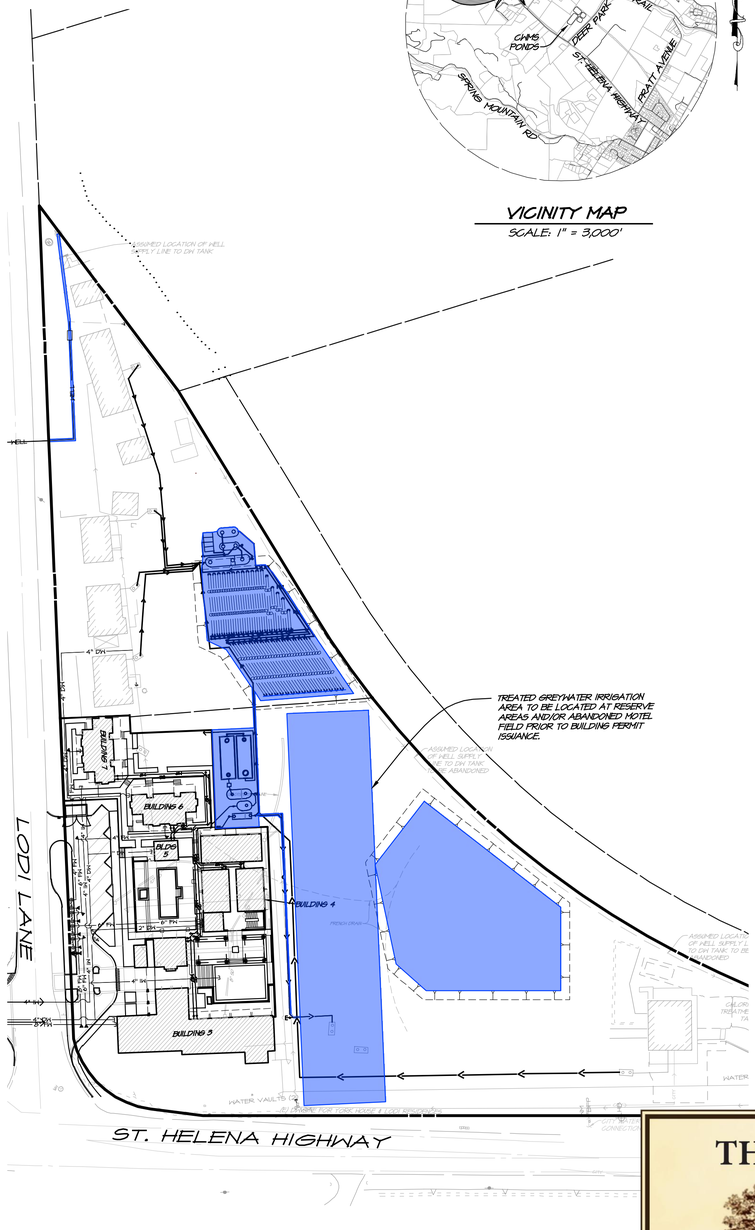
E:\2011\41111050.2_Freemont_Avalon_Development_Due_Diligence\CIVIL\DESIGN EXHIBITS\Exh-CL_FW Joint.dwg 02/15/2022 10:47:03AM lmilgore, COPYRIGHT RSA+

JACKSON FAMILY INVESTMENTS

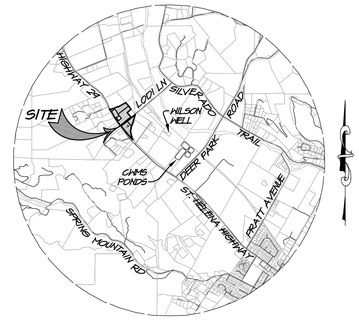
EXISTING WASTEWATER PLAN



PROPOSED WASTEWATER PLAN



PROPOSED WASTEWATER PLAN - OPTIONAL GEOFLOW FIELD



VICINITY MAP

SCALE: 1" = 3,000'

GRAPHIC SCALE

60 0 60 120

(IN FEET)

1 Inch = 60 FT

LEGEND

EXISTING

PROPOSED

SOUTH PARCEL

ITEM	TOTAL AREA (SF)
EXISTING WASTEWATER DISPOSAL	84,396
PROPOSED WASTEWATER DISPOSAL	73,504
OPTIONAL GEOFLOW FIELD	53,418
NET CHANGE - PROPOSED	-20,086
NET CHANGE - GEOFLOW	-30,978

REGISTERED PROFESSIONAL ENGINEER PAUL SARGENT WARNICK No. 82758 Exp. 9-30-22 CIVIL ENGINEER STATE OF CALIFORNIA

THE INN AT THE ABBEY

Est. 1886

SOUTH PARCEL
WASTEWATER DISPERSAL AREAS

PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION JANUARY 2022

RSA* Job #: 41111050.2
Drawn: JFW/LMM Design: PSW

R:\2011\41111050\2_Finished_Architect_Drawings\Development_Drwg_D\Figures\USE PERMIT EXHIBITS Exh-C1_FW Joint.dwg 02/15/2022 10:48:24 AM lmilgrom COPYRIGHT RSA+

HOGAN LAND SERVICES
A CALIFORNIA CORPORATION

October 27, 2020 HLS#4312

Owner: Jackson Family Investments III, LLC
421 Aviation Blvd.
American Canyon, CA 94503

Site: 1190 York Ln & 1181 Lodi Ln
St. Helena, CA 94574
APN: 022-220-028-000 & 022-220-029-000

Subject: **Site Evaluation Report E20-00442 & E20-00444**

Two onsite standard septic systems exist on parcel 028 serving an existing motel, commercial building and a residence. Per the record permits, inspection logs and plans the system serving the motel ("A" sized for 4 bedrooms, installed in 1985) consists of a 1,500 gal. septic tank and 500 LF of 36 in. deep trenches. The system serving the commercial building and residence ("B" sized for 1,500 GPD of restaurant waste, installed in 1995) consists of a 1,200 gal. septic tank, a 1,200 gal. grease trap, 1,500 gallon septic tank serving the residence and 1,250 LF of 30 in. deep trenches with 6 in. of cover fill. Both systems utilize upslope interceptor drains.

A total of five onsite standard systems exist on parcel 029 ("C" to "F"), four of which serve existing residences and one system is abandoned. There are no available record permits confirming the installation date of these systems, just record site maps indicating approximate locations and layouts. The owners are in the planning stage of redeveloping the parcels with a new commercial use, triggering these evaluations.

On July 11, 2019 Hogan Land Services and the Napa County Environmental Health Department met at parcel 028 for a site and soils evaluation (E19-00331) to support the proposed new development. A total of three profile pits were examined in the reserve areas downslope of the two existing systems (Area 1 on the enclosed site exhibit). All profiles demonstrated loam over clay loam soils to at least 54 in. with increased rock and moisture content with depth. Faint spots of shallow mottling were observed at varying depths in all three pits but may have indicated historic conditions as the presence of the interceptor drain shown on the as-built plans has likely had a positive impact on local groundwater conditions. Direct groundwater observations made during the wet-weather season are required to support this.

HOGAN LAND SERVICES
A CALIFORNIA CORPORATION

On October 7, 2020 Hogan Land Services and Napa County Environmental Health met at both parcels 028 & 029 to review two new potential septic areas which were made accessible from the cleared vegetation. Profiles 1 and 2 (Area 2, parcel 028) contained loam/clay loam soils to at least 26 in. over a limiting condition of sandy clay observed in profile 1. Profiles 3 and 4 (Area 3, parcel 029) contained loam/sandy loam to at least 34 in. Faint mottling was observed in all profiles at less than 24 in. and will require direct groundwater observations during the wet-weather testing season to establish suitability for sewage disposal.

Based on this soils evaluation the site appears best suited for a drip system installed at native grade with 12 in. of imported fill (8-10 in. cover), an at-grade with pretreatment or a mound (pending direct groundwater observations). To maximize potential area we recommend replacement of the existing interceptor drains and relocation of any stormwater conveyances away from the proposed leachfield area. Remove the gravel trenches and backfill with native soil. Maintain a 5 ft. setback to the backfilled trenches, a 25 ft. setback to existing drainage courses, a 10 ft. setback to property lines, and avoid historic fill areas. The design should use a soil application rate (SAR) of 0.6 GPD/SF per Table 9 of the Napa County OWTS Technical Standards. A minimum of 200% reserve area is required. If feasible, the existing leachfield "A" may be abandoned and designated as reserve with time allowed for recovery, for a future drip system.

Please let us know if you have any questions or comments regarding these findings.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER
DANIEL P. BYRNE III
No. 80078
CIVIL
STATE OF CALIFORNIA

Daniel Byrne, RCE 80078

Jordan Gore, EIT

Enclosures:

- E20-00442 & E20-00444 Site Evaluation Report
- E19-00331 Site Evaluation Report
- Site Evaluation Exhibit
- Septic Records
- AP Map

Napa County Department of Environmental Management

Page 1 of ___

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #: EZ0-00442 / EZ0-00444

APN: 022-220-028-000 / 029-000

(County Use Only)
Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner: Jackson Family Investments	☒ New Construction ☐ Addition ☐ Remodel ☐ Relocation ☐ Other:
Property Owner Mailing Address: 421 Aviation Blvd	☐ Residential - # of Bedrooms: Design Flow : gpd
City: American Canyon, State: CA Zip: 95403	☒ Commercial – Type:
Site Address/Location: 1190 Yorkville / 1181 Lodi Ln, St. Helena	Sanitary Waste: TBD gpd Process Waste: gpd
	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name: Hogan Land Services	Evaluator's Name: Jaden Grove EIT for Daniel Byrne RCE	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1702 4th St		Telephone Number: 707-5[illegible]
City: Santa Rosa, State: CA Zip: 95404		Date Evaluation Conducted: 10/7/2020

REGISTERED PROFESSIONAL ENGINEER DANIEL P. BYRNE No. 80078 CIVIL STATE OF CALIFORNIA

Primary Area	**Expansion Area** Same as Primary
Acceptable Soil Depth: 24 in.+ Test pit #'s: 1-4	Acceptable Soil Depth: in. Test pit #'s:
Soil Application Rate (gal. /sq. ft. /day): 0.6	Soil Application Rate (gal. /sq. ft. /day):
System Type(s) Recommended: Mound, At-Grade w/ ATU or Drip	System Type(s) Recommended:
Slope: 2-5 %. Distance to nearest water source: >100 ft.	Slope: %. Distance to nearest water source: ft.
Hydrometer test performed? No ☒ Yes ☐ (attach results)	Hydrometer test performed? No ☐ Yes ☐ (attach results)
Bulk Density test performed? No ☒ Yes ☐ (attach results)	Bulk Density test performed? No ☐ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☐ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☐ Yes ☐ (attach results)

Site constraints/Recommendations:

Observed mottling will require wet-weather groundwater monitoring to use top 24"+ of soil

Test Pit # 1

PLEASE PRINT OR TYPE ALL INFORMATION

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-26	A	25	L	S-AB	SH	FRB	NS	C-M	F-F	N
26-39		40	SC	M-AB	SH	F	SS	C-M	N	M-D

Test Pit # 2

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-9	G	10	L	S-AB	SH	FRB	NS	C-M	F-F	N
9-24	G	10	CL	S-AB	SH	F	SS	C-M	N	C-D
24-37		40	CL	M-SB	H	F	SS	C-M	N	C-D

Test Pit # 3

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-24	G	10	L	S-SB	SH	FRR	NS	C-M	N	N
24-38		15	L	S-SB	SH	F	NS	C-M	N	F-F

Attach additional sheets as needed

Test Pit # 4

PLEASE PRINT OR TYPE ALL INFORMATION

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-9	G	10-15	L	S-SB	FRB	FRB	NS	C-M	F-F	N
9-21	D	45	SL	M-SB	F	FRB	NS	C-M	N	C-M
21-34		45	SL	M-SB	F	FRB	NS	C-M	N	C-M

Test Pit # ____

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			

Test Pit # ____

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			

Attach additional sheets as needed

Napa County Department of Environmental Management

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #:	E19-00331
APN:	022-220-028-000
(County Use Only) Reviewed by:	Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner: Jackson Family Investments	☒ New Construction ☐ Addition ☐ Remodel ☐ Relocation ☐ Other:
Property Owner Mailing Address: 421 Aviation Blvd	☒ Residential - # of Bedrooms: 2 Design Flow: 240 gpd
City: American Canyon State: CA Zip: 94503	☐ Commercial – Type: Sanitary Waste: gpd Process Waste: gpd
Site Address/Location: 1190 York Ln, St. Helena	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name: Hogan Land Services	Evaluator's Name: Jordan Grove EIT / Daniel Byrne RCE 82673	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1702 4th St.		Telephone Number: 707-544-2104
City: Santa Rosa State: CA Zip: 95404		Date Evaluation Conducted: 7/11/2019

Existing (E)	Proposed (P)
Primary Area "A" 36 in. Standard w/ 18 in. rock under pipe → 500 L.F.	**Expansion Area**
Acceptable Soil Depth: in. Test pit #'s:	Acceptable Soil Depth: 54 in.+ Test pit #'s: 1-3
Soil Application Rate (gal. /sq. ft. /day): "B" 30 in. Standard w/ 6 in. of fill & 18 in. rock under pipe → 1,250 L.F.	Soil Application Rate (gal. /sq. ft. /day): 0.35 (STE), 0.5 (PTE)
System Type(s) Recommended:	System Type(s) Recommended: 30 in P.D. w/ ATU or 12 in subsurface drip
Slope: 2-5 %. Distance to nearest water source: >100 ft.	Slope: 2-5 %. Distance to nearest water source: >100 ft.
Hydrometer test performed? No ☒ Yes ☐ (attach results)	Hydrometer test performed? No ☒ Yes ☐ (attach results)
Bulk Density test performed? No ☒ Yes ☐ (attach results)	Bulk Density test performed? No ☒ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)

Site constraints/Recommendations:

Purpose: Establish condition of (E) System "A" for potential change in use, reduction in flow from (4/5 bedroom motel → 2 bedroom ADU) or establish soil conditions in reserve area for replacement potential

Setbacks: (E) Drainage systems (interceptor, storm water, etc.), (H) fill, property lines.

Test Pit # 1

PLEASE PRINT OR TYPE ALL INFORMATION

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-9	C	10	L	S-SB	SH	FRB	SS	C-M	M-F	None
9-23	G	20-25	L	W-SB	VH	F	S	F-F	F-F	F-Ft*
23-36	C	35	CL	M-SB	SH	F	S	F-F	F-F	F-Ft
36-54	A	40	CL	M-AB	S	FRB	VS	C-F	F-F	F-Ft
	**U/S	Wall	more	rock 23-	54 (but <50%)					

Hardpan/rock @ 54" * Pot. historic mottling ~ int. drain upslope (E)
Some large pockets of rock, very damp soils @ 47-48+

Test Pit # 2

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-6	A	10	L	S-SB	SH	FRB	SS	C-M	M-F	None
6-21	C	15-20	CL	W-SB	VH	F	S	F-F	F-F	F-VF+
21-36	C	30	L	M-SB	S	FRB	S	C-F	F-F	F-Ft
36-61	A	40	CL	M-AB	S	FRB	VS	C-F	F-F	F-Ft

Very damp soils @ 49-50"+, more rock in U/S wall
hardpan @ 61

Test Pit # 3

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-8	A	10	L	S-SB	SH	FRB	SS	C-M	M-F	None
8-21	C	15-20	CL	W-SB	VH	F	S	F-F	F-F	F-Ft
21-41	C	30	CL	M-SB	H	F	S	C-F	F-F	F-Ft
41-61	A	40	CL	M-SB	SH	FRB	VS	C-F	F-F	F-Ft

hardpan @ 61 similar to P2, mottling similar to P1 + P2,
historic - U/S Int. Drn (E).

Attach additional sheets as needed

JACKSON FAMILY INVESTMENTS

SITE EVALUATION EXHIBIT - E19-00331, E20-00442, E20-00444 - HOGAN LAND SERVICES

PURPOSE: ESTABLISH SOIL PROFILES FOR (P) REPLACEMENT SYSTEM IN SUPPORT OF (N) DEVELOPMENT ON PARCELS 022-220-028-000, 022-220-029-000

(E) MOTEL SYSTEM "A":
36" STANDARD SYSTEM - 4 BEDROOMS, 500 L.F. - INSTALLED IN 1985

(E) BUSINESS & RESIDENTIAL SYSTEM "B":
30" STANDARD SYSTEM W/ 6" COVER FILL - 1,500 GPD, 1,258 L.F. - INSTALLED IN 1995

(E) RESIDENTIAL SYSTEMS "C, D, E & F":
STANDARD SYSTEMS, UNCONFIRMED SIZING - PRE-CODE

SYSTEM "G": ABANDONED

1 - PROFILE PIT (HLS, 7/11/19)

(1) - CORE HOLE (NST, 4/27/92)

1 - PROFILE PIT (HLS, 10/7/20)

GRAPHIC SCALE
40 0 40 80
(IN FEET)
1 inch = 40 FT

(E) INTERCEPTOR DRAIN (APPROXIMATE LOCATION, PER RECORD)

25' S/B

(E) DRAINAGE

AREA 1

AREA 2

AREA 3

NOTE
NORTH PARCEL INTERNAL PROPERTY LINES NOT SHOWN FOR CLARITY

THE INN AT THE ABBEY
Est. 1886

C4.0b - EXISTING SOUTH PARCEL UTILITY PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

USE PERMIT APPLICATION MAY 2019

PSA Job #: 4111050.2
Drawn: JFW Design: PSW

R:\2011\4111050.2-Fremont_Abbey_Development_Dwg_Sht\revs\12DSK\USR\CA12dSB-xrfFinal.dwg 05/24/2019 11:36:57AM Paul COPYRIGHT PSA+

FEE $50 DATE 11/14/84 A.P. NO. 22-220-01

RECEIPT NO. 14699

BY V. Cottrell

NAPA COUNTY
DIVISION OF ENVIRONMENTAL HEALTH
APPLICATION & PERMIT TO CONSTRUCT A SEWAGE SYSTEM

NAME MEYER MERLE (Owner) ADDRESS Lodi Lane & Hwy. 29 St H. (Site Address)

NAME Napa Septic Tank (Contractor) MAILING ADDRESS P.O. Box 428
ADDRESS Guerneville, Ca. 95446
(NEW ADDRESS: 1159 LODI LN.)

TYPE OF WORK (X) INDIVIDUAL (X) NEW CONSTRUCTION ( ) REPAIR ( ) ADD (X) ALTERATIONS
( ) SPECIAL DESIGN _____ ( ) PRIVATE SEWAGE DISPOSAL SYSTEM

PROPOSED USE (X) RESIDENTIAL UNITS 3 4 BDRMS 3 4 ( ) OTHER (Explain _____)
( ) COMMERICAL/INDUSTRIAL GALS/DAY ____

WATER SUPPLY: (X) Public (X) Individual
Distance from well to any part of nearest sewage disposal system 100+ feet.
Additional nearby wells N/A. (Sketch of site to accompany application).

County road setback 50 feet from center line. (X) Bldg. Dept. Form Received
OK. TO ISSUE ACCORDING TO DE SIGNATURE!

WORKER'S COMPENSATION COVERAGE: (Check one of the following)
(X) A certificate of current Worker's Compensation Insurance on file with this office.
( ) A certificate of current Worker's Compensation Insurance is being filed with this application.
( ) I certify that in the performance of the work for which this permit is issued I shall not employ any person in any manner without complying with the Worker's Compensation laws in California.

TERMS OF PERMIT

Applicant agrees that:
1. Sanitarian will be notified a minimum of 24 hours prior to requiring inspection(s).
2. Sanitarian and engineer's inspection, when indicated, will be obtained prior to covering the system.
3. The permit and a copy of the approved sewage disposal system design shall be available at the job site at all times.
4. Any deviation from approved plan and specifications without prior approval of this office will be cause for stopping work until the changes are fully justified and approved.
5. Prior to authorizing occupancy of any building with an engineered designed system a signed statement by the design engineer certifying that the system was installed in compliance with the approved plan must be submitted to the Public Health Officer.
6. This permit is subject to revocation if found to be in nonconformace with Napa County Code of Standards.
7. Before this office allows occupancy of a dwelling, an approved water source has to meet the quantity and storage specifications of the County Code.

IT IS UNDERSTOOD THAT THE ISSUANCE OF A PERMIT IN NO WAY INDICATES THAT A GUARANTEE OF PERFECT AND INDEFINITE OPERATION OF THIS SYSTEM IS MADE BY THE COUNTY OF NAPA PUBLIC HEALTH DEPARTMENT AND THAT THE OWNER IS REQUIRED TO MAKE ANY REPAIRS NECESSARY TO CONFINE SEWAGE AS REQUIRED BY COUNTY CODE.
I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL COUNTY ORDINANCES AND STATE LAWS REGULATING CONSTRUCTION OF SEWAGE DISPOSAL SYSTEMS. THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK AUTHORIZED IS NOT COMMENCED WITHIN 1 YEAR.

Owner or Authorized Agent John Rawlins

Specifications: (X) Septic Tank Concrete Type 1500 Size (Gallons)
( ) Drainline: 625' Total Length 36" Trench Depth 18 Rock under Tile
( ) Sewer Line: _____ Type _____ Approximate Length _____ Depth
( ) Sump Pump: _____ Tank Size _____ Alarm Type
( ) See Special Design Plans Approved _____ (Date) Designer _____
( ) See Private Sewer System Plans Approved _____ (Date) Designer _____
INSTALL FRENCH DRAIN ABOVE SYSTEM 48"
( ) ~~Other~~ CONDITIONS: ① THAT A SMALL WATER SYSTEM PERMIT BE OBTAINED FROM THIS OFFICE ② THAT IF WATER QUANTITY IS INADEQUATE A STORAGE TANK OF ADEQUATE SIZE BE INSTALLED ③ THAT A DOUBLE CHECK VALVE BE INSTALLED AS PER CITY OF ST. HELENA

Issuing Sanitarian MP

EH 174
Office-white; Cont[illegible]or-yellow; Owner-pink

NOT TO BE INSPECTED { TANK ✓ SEWER LINE ✓ TRENCH DRAIN ✓ 2-60' LINES ✓ PLOT PLAN: EFFLUENT LINE TO FIELD. } CHECK 5/28/85

INSPECTION RECORD

Sewer Line ABS (Material) 12"+ (Depth) 5/24/85 (Date) MJP (Inspector)

Septic Tank Concrete (Type) 1500 GALS. (Size) 5/24/85 (Date) MJP (Inspector)

Drain Lines (Date) 5/24/85 MJP (Inspector)

Soil Compares with Percolation Record OK.

Average Surface Slope(s) 5%+

Trench Width 12" Depth 36" Total Length 500' No. Lines 6

Gravel Under Tile 18" Distance Between Trenches SEE PLAN

Top of Tile to Finish Grade 12" Distance Wells from System 100'+

Accessory Facilities (Diversion Drains, Sump Pumps, etc.) FRENCH DRAIN OK.

5/22/85 380' OF LINE OK.

5/24/85 120' OF LINE OK.

5/28/85 SYSTEM COMPLETED - ADVISED MERLE MEYER THAT WE CANNOT

Additional Field Notes FINAL JOB UNTIL ALL PERMIT CONDITIONS ARE MET.

① WATER SYSTEM PERMIT APPLICATION WILL BE MAILED TO HER

② THIS OFFICE NEEDS LETTER FROM CITY OF ST. HELENA APPROVING INSTALLATION OF CHECK VALVE ③ WATER STORAGE WILL BE INSTALLED IF NEEDED

Plot Plan Accuracy Checked OK.

Date of Final DO NOT FINAL UNTIL ALL PERMIT CONDITIONS ARE MET. Inspector MJP

Date Bldg. Dept. Final 6/29/88 Inspector MJP

DATE OF FINAL : 11/1/85 (WATER SYSTEM PERMIT ISSUED)

Cp# 22-220-01

Merle Meyers

Lodi Lane & Hwy 29

"AS-BUILT"

OLD S.P.RR. ℄ R/W ℄

1964 810 tank 5'x48'LF

50'
50'
50'
50'
50'

12'

9'

2 B.R. DUPLEX

2 Br.

GARAGE

GARAGE

55'
55'
9'

18'

20'

1 B.R. HOUSE

50'
10'
50'

Disp. Box

800 GAL. TANK

5'

1 B.R. CABIN

100'+

2200 GAL TANK

DIST. BOX

55'
55'
8'
55'
8'

DIST. BOX

6'

810 GAL TANK

21'

1 B.R. CABIN

17'

30'

1 B.R.

4 B.R.

80'

55'

1500 GAL. TANK

36'

4" SEWER LINE TO BIG WHITE HOUSE ON CORNER

TO WELL 209'+

DAYLIGHT

60'
10'
60'
100'
10'
100'
10'
110'

FRENCH DRAIN 4'+ DEEP 4" PERF. PIPE

NEW SYSTEM INSTALLED 5/23/85

LODI LANE

NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
REQUEST FOR SITE EVALUATION INSPECTION

ENVIRONMENTAL HEALTH DEPT. USE ONLY

FEE: 112 —

DATE: 4/27/92

RECEIPT: 30780

BY:

PARCEL NUMBER: 22-220-01 028

JOB ADDRESS: LODI LANE

OWNER: M. MEYER

TEST CONDUCTED BY: NGT

TYPE OF TEST: FIELD ANALYSIS Y

To be run on 4/27 at 2:00 am/(pm)

PERCOLATION TEST ____

To be run on ____ from ____ am/pm to ____ pm

PURPOSE OF TEST: HOUSE: ____ WINERY: ____ OTHER: COMMERCIAL DEVELOP.

PROJECTED WASTEWATER FLOWS: 1500 gpd

****

PERCOLATION TEST INSPECTION RESULTS

Pre-soak checked? yes ____ no ____ Length of pre-soak: ____

Checked by: ____ Date: ____

Rate at time of inspection: ____ Stabilized perc rate: ____

Gravel and Pipe Used? yes ____ no ____ If so, take the perc rate ____ x .6 = ____ in/hr

****

TYPE OF SYSTEM APPROVED

STANDARD SYSTEM

Acceptable soil to: SEE BELOW / Assigned perc range: (1-3) / 3-6 / 6-12

Depth of trenches: SEE BELOW / Rock under pipe: 12" / Cover over rock: 12"

Lineal feet of leachline required: 1900 ± (SEE BELOW) / Plot plan received: NEED

Slope: 0-3% / Surface drainage problems: ____

Additional information: FILL AREA: 36" TRENCH & 18" UNDER PIPE / AREA OF HOLE #3: DEPTH OF TRENCH TO BE DETERMINED BY DEPTH OF FRENCH DRAIN TO BYPASS - STAY OUT OF AREA OF HOLE #2

SPECIAL DESIGN SYSTEM DUE TO THE FOLLOWING - Size constraints: ____

Perc rate too slow: ____ /Perc rate too fast: ____ /Steep slope: ____

Insufficient soil depth: ____ /High seasonal groundwater: ____

Acceptable soil for special design: ____ /Other problems: ____

E.H. Specialist ____ (MOP) Date 4/27/92

FIELD ANALYSIS

TEXTURE (In the proposed trench zone)

CLAY CONTENT

Core Hole	1	2	3	4	5	6
Low (<12)						
Mod (12-27)	X					
High (27-40)		X	X			
High (>40)		X				

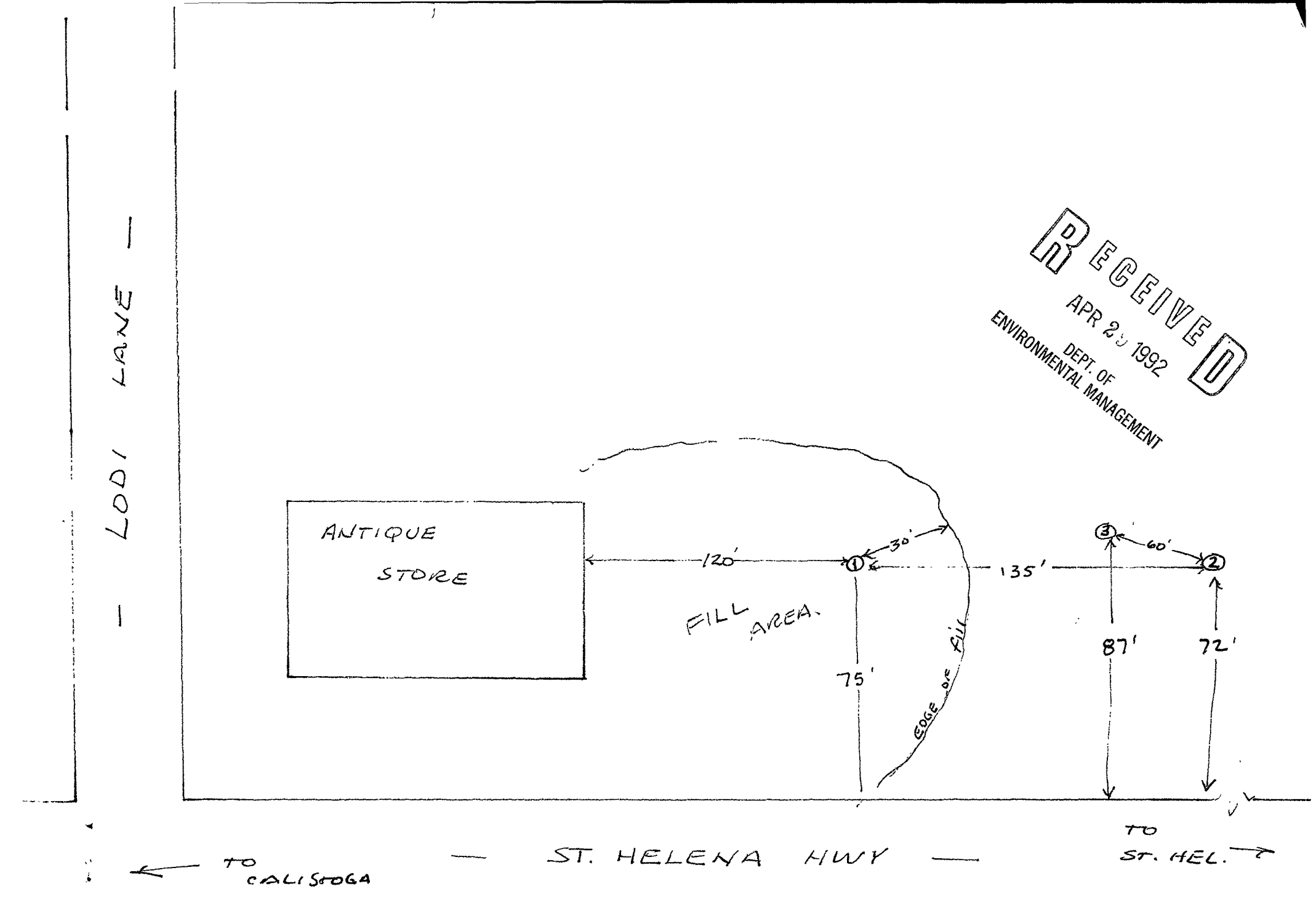
SAND CONTENT

Core Hole	1	2	3	4	5	6
High (>50)	X					
Mod (20-50)			X			
Low (<20)		X				

GRAVEL, COBBLE, STONE CONTENT

Core Hole	1	2	3	4	5	6
Very High (>60)						
High(35-60)						
Mod (15-35)	X					
Low (<15)		X	X			

* * * *



RECEIVED
APR 29 1992
DEPT. OF ENVIRONMENTAL MANAGEMENT

MERLE MEYER
1159 Lodi LANE
ST. HELENA.

A.P.# 22-220-01

SITE EVAL. CORE HOLES
4/27/92

cc #195

DATE 3/30/95
EXP. DATE 3/30/97
RECEIPT NO. 38697
BY CMW

A.P. # 22-220-01 028
RECORD # 5381

NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A SEWAGE SYSTEM

OWNER: MERLE MEYER
SITE ADDRESS: LODI LN X HWY 29
MAILING ADDRESS: 1159 LODI LN. ST. HELENA 94574
PHONE #:

CONTRACTOR:
ADDRESS: SELF
PHONE #:

TYPE OF PROJECT NEW SYSTEM (✓) REPLACEMENT SYSTEM ( ) ADDITION( ) RELOCATION ( ) REPAIR ( )

PROPOSED USE

	EXISTING BEDROOMS	TOTAL PROPOSED BEDROOMS
RESIDENTIAL:		
RESIDENCE ( )		
2nd DWELLING( )		
GUESTHOUSE ( )		

COMMERCIAL/INDUSTRIAL X 1500 GPD
~~OTHER~~ ( ) restaurant approved per UP 92020-UP

BUILDING DEPARTMENT FORM RECEIVED ( ) (IF APPLICABLE)
agreement for future restaurant received (yes)

WATER SUPPLY **PUBLIC** (✓) NAME OF AGENCY Meyers Water System DISTANCE OF CLOSEST WATER SOURCE TO ANY PART OF THE SEWAGE DISPOSAL SYSTEM 100'+
INDIVIDUAL( ) WELL( ) SPRING ( ) OTHER
INDIVIDUAL WATER SUPPLY PERMIT ISSUED YES ( ) NO ( )

SPECIFICATIONS
SEPTIC TANK: EXISTING SIZE (GAL) — PROPOSED SIZE 2500 (GAL) * 1200 gallon concrete grease trap
DRAINLINE: TOTAL LENGTH 1667 LF TRENCH DEPTH 36"
ROCK UNDER PIPE 12" DEPTH COVER MATERIAL OVER ROCK- BACKFILL 18" FILL
SUMP PUMP: SIZE GAL (audible and visual alarms required on all pump systems)
SPECIAL DESIGN PLANS: DATE APPROVED DESIGNER
PRIVATE SEWAGE DISPOSAL SYSTEM PLANS: DATE APPROVED DESIGNER

*all plumbing except restrooms must go through grease trap.
system to go in per layout by Ken Diebert dated 6/92 ISSUING ENVIRONMENTAL HEALTH SPECIALIST: L Mitchell
amount of line may be decreased if 18" rock used. (1250) ↑ (incorrect ??)

WORKER'S COMPENSATION COVERAGE: (CHECK ONE OF THE FOLLOWING)
( ) A certificate of current Worker's Compensation Insurance is on file with this office
( ) A certificate of current Worker's Compensation Insurance is being filed with this application
(X) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner without complying with the Worker's Compensation laws of California

TERMS OF PERMIT: APPLICANT AGREES THAT:
1) EH SPECIALIST WILL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO REQUIRING INSPECTION(S)
2) EH SPECIALIST'S INSPECTION WILL BE OBTAINED PRIOR TO COVERING THE SYSTEM
3) THE PERMIT AND A COPY OF THE APPROVED SPECIAL DESIGN SEWAGE DISPOSAL SYSTEM DESIGN (IF APPLICABLE) SHALL BE AVAILABLE AT THE PARCEL SITE AT ALL TIMES
4) ANY DEVIATION FROM PERMIT SPECIFICATIONS WITHOUT PRIOR APPROVAL FROM THIS OFFICE WILL BE CAUSE FOR STOPPING WORK UNTIL THE CHANGES ARE FULLY JUSTIFIED AND APPROVED
5) PRIOR TO AUTHORIZING OCCUPANCY OF ANY BUILDING WITH A SPECIAL DESIGN SEWAGE SYSTEM, A SIGNED STATEMENT BY THE DESIGNER CERTIFYING THE SYSTEM WAS INSTALLED IN COMPLIANCE WITH THE APPROVED PLANS MUST BE SUBMITTED TO THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

I, THE UNDERSIGNED, AGREE TO COMPLY WITH ALL CONDITIONS OF THIS PERMIT AND ALL OTHER APPLICABLE CODE REQUIREMENTS. FURTHERMORE, I UNDERSTAND THAT THE OFFICE OF ENVIRONMENTAL MANAGEMENT IN NO WAY GUARANTEES INDEFINITE TROUBLE-FREE OPERATION OF THIS SYSTEM, AND THAT FUTURE REPAIR MAY BE NECESSARY.

OWNER OR AUTHORIZED AGENT: Merle Meyer

INSPECTION SCHEDULE

SEWER LINE:
MATERIAL AND SIZE ABS/SCH 40
FALL 1/8"/LF + (more than needed) FINAL DEPTH 12"+
DISTANCE TO ANY WATER SOURCE

COMMENTS

INSPECTOR CMneehell DATE 5/3/95

SEPTIC TANK:
MANUFACTURER Relvage TYPE 1200gal grease trap & 1200gal septic tank (both concrete) SIZE
DISTANCE TO ANY WATER SOURCE

COMMENTS I'T OK

INSPECTOR CMneehell DATE 5/3/95

LEACH LINES:
TRENCH WIDTH 18" TRENCH DEPTH 36"
TOTAL LENGTH 1250LF NUMBER OF LINES (19) (12 w/o crossover)
ROCK UNDER LEACH LINE 18" DISTANCE BETWEEN TRENCHES 8'±
DEPTH OF COVER MATERIAL OVER ROCK 12" DISTANCE TO ANY WATER SOURCE 10' to water line 100'+ to well

COMMENTS all lines seen on 5/3, 5/4, 5/5 and 5/8 1995.

INSPECTOR CMneehell (nat + Jeanna) DATE 5/10/95

SUMP PUMP:
MANUFACTURER TYPE SIZE
PUMP CHECKED ALARM CHECKED

NA

COMMENTS

INSPECTOR DATE

ACCESSORY FACILITIES:
(DIVERSION DRAINS, D-BOXES, ETC.) "D" Boxes OK. Diversion drains OK. 5/11/95

COMMENTS Required that effluent line to next box be raised for serial distribution

INSPECTOR (CMneehell) DATE 5/8/95

FINAL INSPECTION:
(construction completed and approved)
INSPECTOR CMneehell / nat DATE 5/11/95

DATE DESIGNER'S LETTER RECEIVED (IF APPLICABLE)

DATE PLOT PLAN RECEIVED/ACCURACY CHECKED

DATE INDIVIDUAL WATER SYSTEM WAS FINALED (IF APPLICABLE)

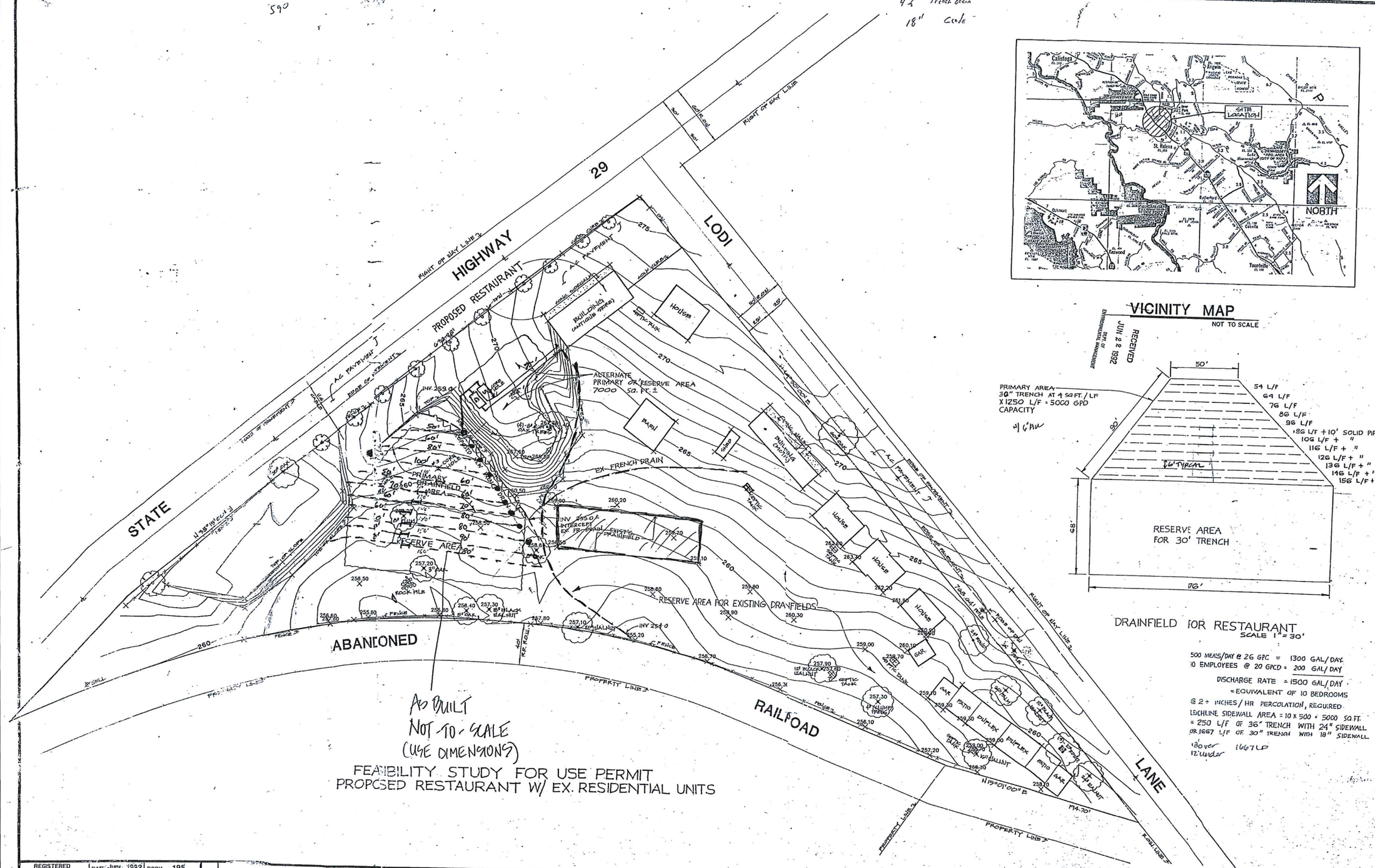
DATE NOTICE OF COMPLETION SENT TO BUILDING DEPARTMENT (IF APPLICABLE)

DATE PERMIT CLOSED

sl/sewagepermit

590

4" French drain
18" Cmp



As Built
Not To Scale
(Use Dimensions)

FEASIBILITY STUDY FOR USE PERMIT
PROPOSED RESTAURANT W/ EX. RESIDENTIAL UNITS

VICINITY MAP
NOT TO SCALE

RECEIVED
JUN 22 1992
DEPT OF ENVIRONMENTAL MANAGEMENT

PRIMARY AREA
30" TRENCH AT 4 SQ.FT./LF
X 1250 L/F = 5000 GPD CAPACITY

54 L/F
64 L/F
76 L/F
86 L/F
96 L/F
186 L/F + 10' SOLID PIPE
106 L/F + "
116 L/F + "
126 L/F + "
136 L/F + "
146 L/F + "
156 L/F + "

DRAINFIELD FOR RESTAURANT
SCALE 1" = 30'

500 MEALS/DAY @ 26 GPC = 1300 GAL/DAY
10 EMPLOYEES @ 20 GPCD = 200 GAL/DAY
DISCHARGE RATE = 1500 GAL/DAY
= EQUIVALENT OF 10 BEDROOMS
@ 2+ INCHES/HR PERCOLATION, REQUIRED
LEACHLINE SIDEWALL AREA = 10 x 500 = 5000 SQ.FT.
= 250 L/F OF 36" TRENCH WITH 24" SIDEWALL
OR 1667 L/F OF 30" TRENCH WITH 18" SIDEWALL

180 over 1667 LF
12 under

REGISTERED	DATE June 1992	BOOK 195	
	DRAWN RAY	PAGE 68-75	
	DESIGNED KCD	FILE Napa	
	CHECKED WSA	JOB NO.	
	PROJ. MGR. KCD	SCALE 1" 40'	
	SIGNED:	R.C.E. 17016	
STAMP	NO.	REVISIONS	BY DATE

DR:
MERLE MEYER
1159 LODI LANE
ST. HELENA, CALIFORNIA

Northpoint Engineers, Inc
Civil Engineers
Land Planners
Surveyors
2118 Sacramento St.
Vallejo, California
94590
(707) 643-6431

TOPOGRAPHICAL SURVEY
A.P.N. 22-220-01
1159 LODI LANE, ST. HELENA, CALIFORNIA
FOR: MERLE MEYER
ST. HELENA CALIFORNIA

SHEET 1 OF 1 SHEETS

DATE 5-6-02
FEE 78.00
RECEIPT NO 22744
BY DLP
cash

A.P. # 22-220-028
JOB # 92-14071
ISSUE DATE 6-4-02
EXPIRATION DATE 6-4-04

NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A SEWAGE SYSTEM

OWNER: Norman Alumbaugh
CONTRACTOR: Self
SITE ADDRESS: St. Helena Hwy
ADDRESS:
MAILING ADDRESS: P.O. Box 200, Pope Valley 94567
PHONE #:
PHONE #:

TYPE OF PROJECT: NEW SYSTEM ( ) REPLACE SYSTEM ( ) ADDITION ( ) RELOCATION ( ) TANK DESTRUCTION (X) & new tank SEWER LINE (X) REPAIR ( )
reason for replace/relocate/repair

PROPOSED USE		EXISTING BEDROOMS	TOTAL POTENTIAL BEDROOMS	
RESIDENTIAL:				COMMERCIAL/INDUSTRIAL (X) 1500 GPD
	RESIDENCE (X)	3		
	2nd DWELLING ( )			OTHER (X) Deli
	GUESTHOUSE ( )			FLOW (gpd)

BUILDING DEPARTMENT FORM RECEIVED ( ) (IF APPLICABLE)
CITY/SEWER DISTRICT CLEARANCE ( ) APPROVED ( ) NOT APPROVED BY

WATER SUPPLY PUBLIC ( ) NAME OF AGENCY
INDIVIDUAL ( ) WELL ( ) SPRING ( ) OTHER
DISTANCE OF CLOSEST WATER SOURCE TO ANY PART OF THE SEWAGE DISPOSAL SYSTEM
INDIVIDUAL WATER SUPPLY PERMIT ISSUED YES ( ) NO ( )

SPECIFICATIONS SEPTIC TANK: EXISTING SIZE (GAL) (1200g septic + 1200g grease (Deli) 2400g Deli) PROPOSED SIZE 1200 (GAL) minimum (House)
DRAINLINE: TOTAL LENGTH Existing TRENCH DEPTH TRENCH WIDTH
ROCK UNDER PIPE DEPTH COVER MATERIAL OVER ROCK- BACKFILL FILL
SEWER LINE: TYPE APPROX. LENGTH
SUMP PUMP: SIZE 500 GAL min (audible and visual alarms required on all pump systems)
SPECIAL DESIGN PLANS: DATE APPROVED DESIGNER
PRIVATE SEWAGE DISPOSAL SYSTEM PLANS: DATE APPROVED DESIGNER

Maintain 100' setback from well to new septic tank. Destroy old tank in accordance w/ Napa Co. guidelines.

ISSUING ENVIRONMENTAL HEALTH SPECIALIST: Kim Withson

WORKER'S COMPENSATION COVERAGE: (CHECK ONE OF THE FOLLOWING)
( ) A certificate of current Worker's Compensation Insurance is on file with this office
( ) A certificate of current Worker's Compensation Insurance is being filed with this application
(X) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner without complying with the Worker's Compensation laws of California

TERMS OF PERMIT: APPLICANT AGREES THAT:
1) EH SPECIALIST WILL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO REQUIRING INSPECTION(S)
2) EH SPECIALIST'S INSPECTION WILL BE OBTAINED PRIOR TO COVERING THE SYSTEM
3) THE PERMIT AND A COPY OF THE APPROVED SPECIAL DESIGN SEWAGE DISPOSAL SYSTEM DESIGN (IF APPLICABLE) SHALL BE AVAILABLE AT THE PARCEL SITE AT ALL TIMES
4) ANY DEVIATION FROM PERMIT SPECIFICATIONS WITHOUT PRIOR APPROVAL FROM THIS OFFICE WILL BE CAUSE FOR STOPPING WORK UNTIL THE CHANGES ARE FULLY JUSTIFIED AND APPROVED
5) PRIOR TO AUTHORIZING OCCUPANCY OF ANY BUILDING WITH A SPECIAL DESIGN SEWAGE SYSTEM, A SIGNED STATEMENT BY THE DESIGNER CERTIFYING THE SYSTEM WAS INSTALLED IN COMPLIANCE WITH THE APPROVED PLANS MUST BE SUBMITTED TO THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

I, THE UNDERSIGNED, AGREE TO COMPLY WITH ALL CONDITIONS OF THIS PERMIT AND ALL OTHER APPLICABLE CODE REQUIREMENTS. FURTHERMORE, I UNDERSTAND THAT THE OFFICE OF ENVIRONMENTAL MANAGEMENT IN NO WAY GUARANTEES INDEFINITE TROUBLE-FREE OPERATION OF THIS SYSTEM, AND THAT FUTURE REPAIR MAY BE NECESSARY.

OWNER OR AUTHORIZED AGENT: Norman Alumbaugh

INSPECTION SCHEDULE

WORK PERFORMED BY (CONTRACTOR) Duckworth Construction

SEWER LINE:
MATERIAL AND SIZE PVC 4"
FALL okay FINAL DEPTH 12"+
DISTANCE TO ANY WATER SOURCE 100'
COMMENTS
INSPECTOR Kim Withrow DATE 5-21-03

SEPTIC TANK:
MANUFACTURER TYPE Concrete SIZE 1500g (x2)
DISTANCE TO ANY WATER SOURCE 100'+
COMMENTS install T's on each tank
INSPECTOR Kim Withrow DATE 5-21-03

LEACH LINES:
TRENCH WIDTH existing TRENCH DEPTH
TOTAL LENGTH NUMBER OF LINES
ROCK UNDER LEACH LINE DISTANCE BETWEEN TRENCHES
DEPTH OF COVER MATERIAL OVER ROCK DISTANCE TO ANY WATER SOURCE
COMMENTS
INSPECTOR DATE

SUMP PUMP:
MANUFACTURER Peabody TYPE poly SIZE 525 G
PUMP CHECKED okay ALARM CHECKED okay
COMMENTS
INSPECTOR KDW DATE 9-24-03

ACCESSORY FACILITIES:
(DIVERSION DRAINS, D-BOXES, ETC.)
COMMENTS
INSPECTOR DATE

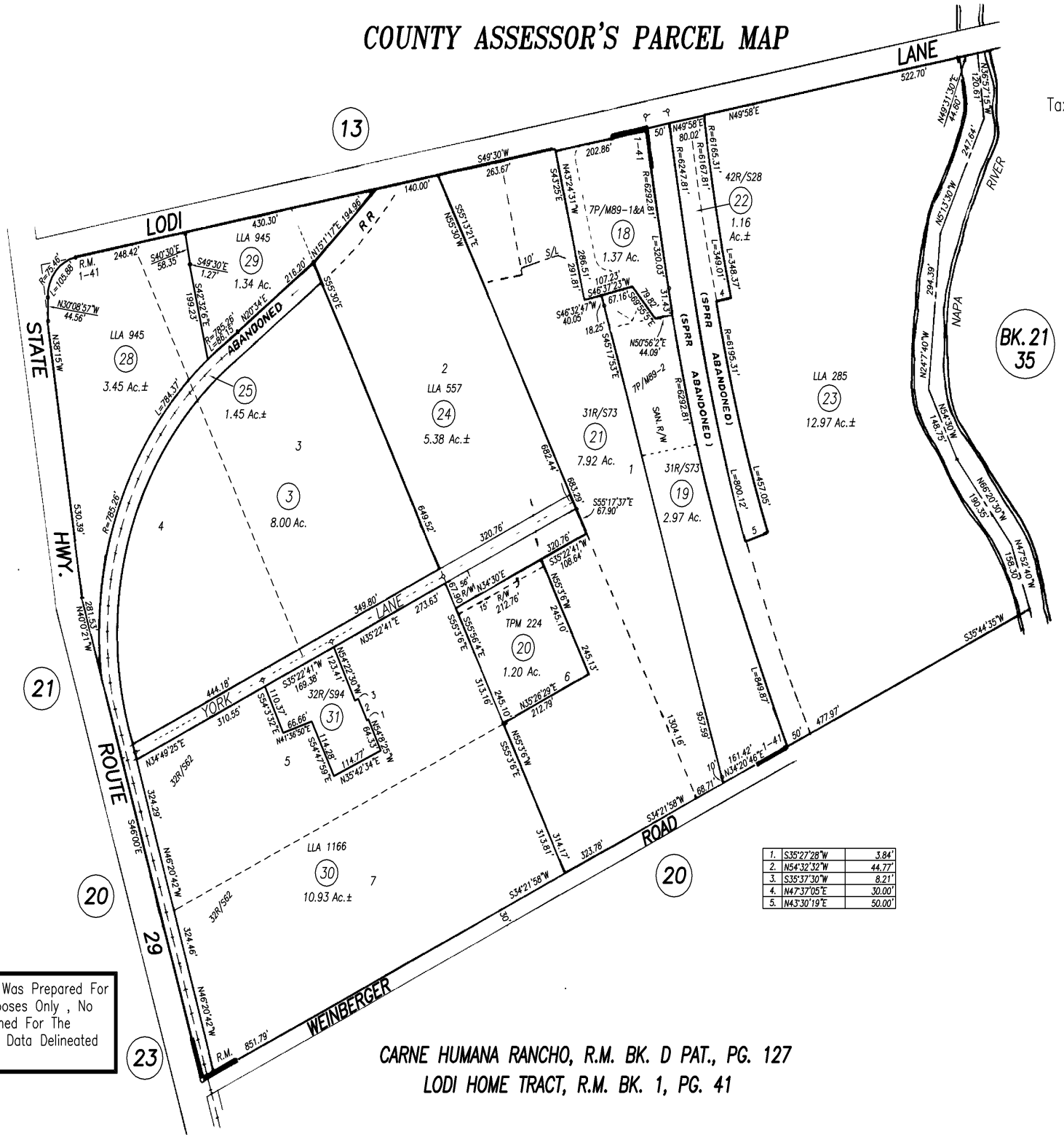
FINAL INSPECTION:
(construction completed and approved)
INSPECTOR Kim Withrow DATE 9-24-03

DATE DESIGNER'S LETTER RECEIVED (IF APPLICABLE)
DATE PLOT PLAN RECEIVED/ACCURACY CHECKED
DATE INDIVIDUAL WATER SYSTEM WAS FINALED (IF APPLICABLE)
DATE APPROVAL ON ELECTRICAL (FOR SUMP PUMP) RECEIVED FROM BUILDING (IF APPLICABLE)
DATE NOTICE OF COMPLETION SENT TO BUILDING DEPARTMENT (IF APPLICABLE)
DATE PERMIT CLOSED

COUNTY ASSESSOR'S PARCEL MAP

22-22

Tax Area Code
85001



1.	S35°27'28"W	3.84'
2.	N54°32'32"W	44.77'
3.	S35°37'30"W	8.21'
4.	N47°37'05"E	30.00'
5.	N43°30'19"E	50.00'

220-04 & 05 RS	7-23-99
220-30 & 31 LLA	2-24-00
220-31 RS	3-23-00
ST NAME CORR	10-8-04
220-28 PTN TO RD	4-21-05
220-22 RS	5-6-13
REVISION	DATE

1955-G2

NOTE: This Map Was Prepared For Assessment Purposes Only , No Liability Is Assumed For The Accuracy Of The Data Delineated Hereon.

CARNE HUMANA RANCHO, R.M. BK. D PAT., PG. 127
LODI HOME TRACT, R.M. BK. 1, PG. 41

22-22

APPENDIX 4

Domestic Greywater:
Water Balance for Irrigation and Storage, Irrigation Areas Exhibit

Reclaimed Domestic Greywater
Water Balance for Irrigation and Storage

Project Description		Annual Greywater Flow Volume		
Project Number:	4111050.2			
Project Name:	Freemark Abbey			
Prepared By:	Maggie Schneider			
Date:	September 26, 2017	Total Annual Greywater Generated:	600,000	gal/year

Landscape Irrigation Parameters		
Crop type / name:	Native grass and trees	
Total irrigated acres of crop:	0.84	acres

Monthly Greywater Generation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hotel Occupancy	50%	50%	60%	60%	70%	85%	90%	90%	90%	75%	60%	50%
Monthly greywater generated as % of annual total:	6%	6%	7%	7%	8%	10%	11%	11%	11%	9%	7%	6%
Monthly greywater generated [gallons]:	36,145	36,145	43,373	43,373	50,602	61,446	65,060	65,060	65,060	54,217	43,373	36,145

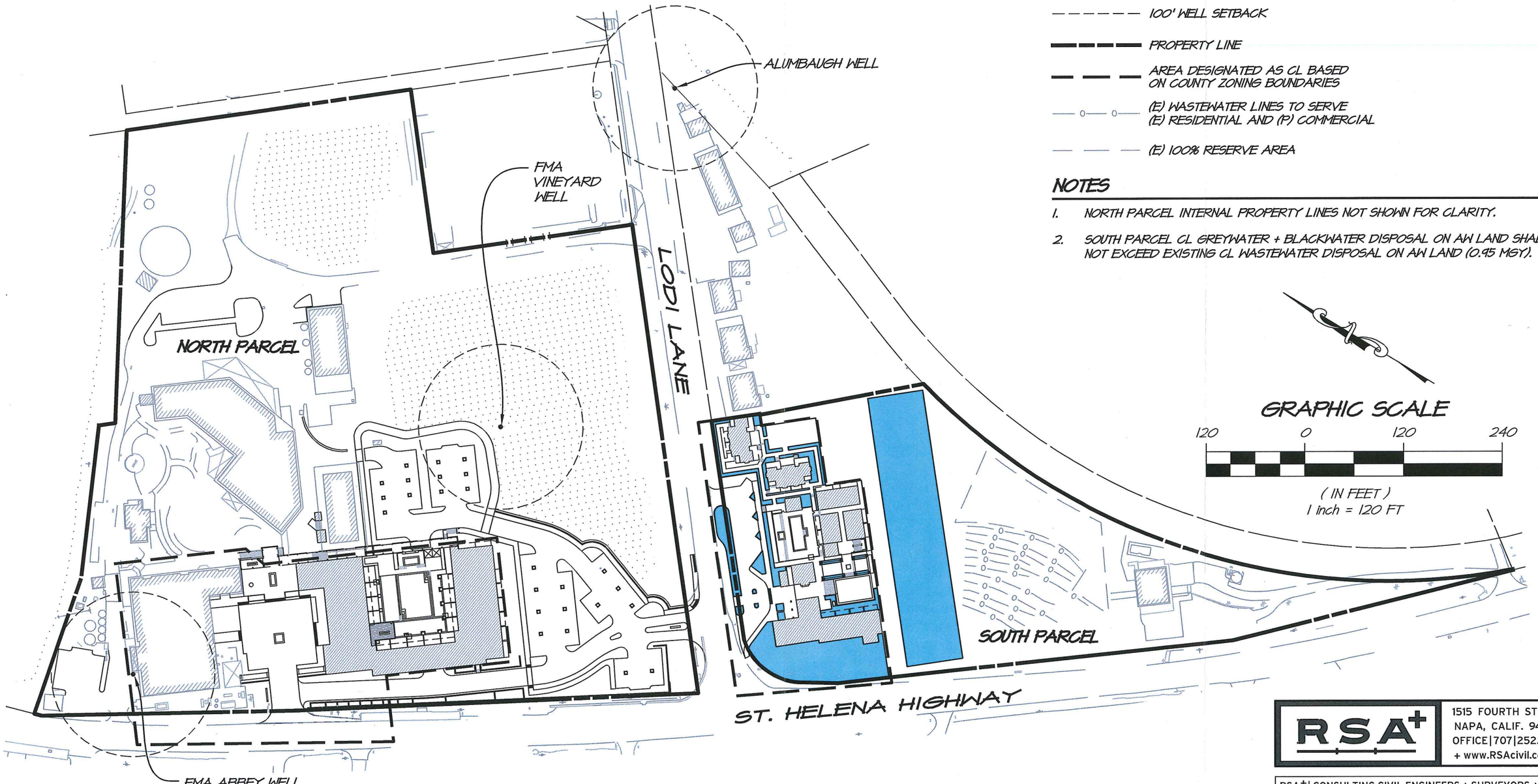
Monthly Landscape Irrigation Water Use												
(Based on evapotranspiration crop demand and irrigated area)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beginning of month reclaimed water in storage [gallons] (This number brought forward from end of previous month)	29,705	43,224	48,715	29,868	0	0	0	0	0	0	0	10,530
This month's greywater produced and available for landscape irrigation [gallons] (	36,145	36,145	43,373	43,373	50,602	61,446	65,060	65,060	65,060	54,217	43,373	36,145
Reference ET (ETo) (in/month) (see note 1)	1.24	1.68	3.41	4.8	6.2	6.9	7.44	6.51	5.1	3.41	1.8	0.93
Crop Coefficient (k_c) (see note 2)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Crop water demand per acre [inches]	0.99	1.34	2.73	3.84	4.96	5.52	5.95	5.21	4.08	2.73	1.44	0.74
Crop water demand per acre [gallons]	26,935	36,493	74,072	104,265	134,676	149,881	161,611	141,410	110,782	74,072	39,099	20,201
Total crop water demand for irrigated area [gallons]	22,626	30,654	62,220	87,583	113,128	125,900	135,753	118,784	93,057	62,220	32,844	16,969
Will landscape be irrigated with reclaimed water this month?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Greywater reclaimed for landscape irrigation [gallons]	22,626	30,654	43,373	43,373	50,602	61,446	65,060	65,060	65,060	54,217	32,844	16,969
Landscape irrigation water required from storage or other source [gallons]	0	0	18,847	44,209	62,525	64,454	70,693	53,724	27,996	8,003	0	0
Drawdown from storage for landscape irrigation [gallons]	0	0	18,847	29,868	0	0	0	0	0	0	0	0
Process wastewater generated this month, unused for irrigation, to be reclaimed and stored [gallons]	13,519	5,491	0	0	0	0	0	0	0	0	10,530	19,175
Net end-of-month reclaimed water storage after all irrigation [gallons]	43,224	48,715	29,868	0	0	0	0	0	0	0	10,530	29,705
End of Water Balance												

Peak Minimum Monthly Storage = 48,715 gallons

Notes:

1. Reference ETo from California Irrigation Management Information System
2. Crop Coefficient from Table 1 of "Estimating Irrigation Water Needs of Landscape Plantings in California", University of California Cooperative Extension, August 2000.

FREEMARK ABBEY
DOMESTIC GREYWATER LANDSCAPE IRRIGATION



LEGEND

- AREA OF LANDSCAPE AVAILABLE TO BE IRRIGATED WITH TREATED GREYWATER (0.84 ACRES)
- 100' WELL SETBACK
- PROPERTY LINE
- AREA DESIGNATED AS CL BASED ON COUNTY ZONING BOUNDARIES
- (E) WASTEWATER LINES TO SERVE (E) RESIDENTIAL AND (P) COMMERCIAL
- (E) 100% RESERVE AREA

NOTES

1. NORTH PARCEL INTERNAL PROPERTY LINES NOT SHOWN FOR CLARITY.
2. SOUTH PARCEL CL GREYWATER + BLACKWATER DISPOSAL ON AW LAND SHALL NOT EXCEED EXISTING CL WASTEWATER DISPOSAL ON AW LAND (0.95 MGY).

GRAPHIC SCALE

120 0 120 240

(IN FEET)
1 inch = 120 FT

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

JUNE 7, 2018 4111050.2 Exh-Dom GW Land Irrig.dwg

APPENDIX 5

Winery Process Wastewater:
Water Balance for Irrigation and Storage, Irrigation Areas Exhibit

Treated Winery Process Wastewater
Water Balance for Irrigation and Storage

Project Description		**Annual Process Waste Flow Volume**		
Project Number:	4111050.2	Wine Production:	60,000	gal/year
Project Name:	Freemark Abbey		5	
Prepared By:	Maggie Schneider	Annual Process Waste per Gallon Wine:	300,000	gal/year
Date:	April 27, 2020	Total Annual Process Waste Generated:	300,000	gal/year

Vineyard Irrigation Parameters			**Landscape Irrigation Parameters**		
Acres of irrigated vineyard:	1.79	acres	Crop type / name:	Vineyard Cover Crop	
Row spacing:	7.0	feet	Total irrigated acres of crop:	1.79	acres
Vine spacing:	7.0	feet			
Total number of vines:	1,591	vines			
Water use per vine per month (peak):	26	gal			
Total peak monthly irrigation demand:	41,373	gal			

Monthly Process Wastewater Generation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Process Wastewater generated as % of annual total:	4%	4%	6%	8%	10%	12%	12%	12%	12%	10%	5%	5%
Monthly process wastewater generated [gallons]:	12,000	12,000	18,000	24,000	30,000	36,000	36,000	36,000	36,000	30,000	15,000	15,000

Monthly Vineyard Irrigation Water Use												
(Based on per-vine water use)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beginning of month reclaimed water in storage [gallons] (This number brought forward from end of previous month)	0	0	0	0	0	0	0	0	0	0	0	0
Vineyard irrigation as % of peak month irrigation demand:	6%	6%	10%	100%	100%	100%	100%	100%	100%	100%	10%	10%
Irrigation per month per vine (gallons):	2	2	3	26	26	26	26	26	26	26	3	3
Total vineyard irrigation demand [gallons]:	2,482	2,482	4,137	41,373	41,373	41,373	41,373	41,373	41,373	41,373	4,137	4,137
Will vineyard be irrigated with reclaimed water this month?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Process wastewater generated this month, reclaimed for vineyard irrigation [gallons]	2,482	2,482	4,137	24,000	30,000	36,000	36,000	36,000	36,000	30,000	4,137	4,137
Remaining vineyard irrigation demand after using this month's process water [gallons]	0	0	0	17,373	11,373	5,373	5,373	5,373	5,373	11,373	0	0
Drawdown from storage for remaining vineyard irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Well water required to satisfy remaining vineyard irrigation demand	0	0	0	17,373	11,373	5,373	5,373	5,373	5,373	11,373	0	0
Net storage after vineyard irrigation drawdown [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
This month's process wastewater, remaining after vineyard irrigation, available for landscape irrigation[gallons]	9,518	9,518	13,863	0	0	0	0	0	0	0	10,863	10,863

Water balance continues on next page for cover crop irrigation.

Monthly Landscape Irrigation Water Use												
(Based on evapotranspiration crop demand and irrigated area)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
This month's process wastewater, remaining after vineyard irrigation, available for landscape irrigation[gallons] *(From sheet 1)*	9,518	9,518	13,863	0	0	0	0	0	0	0	10,863	10,863
Reference ET (ETo) (in/month) (see note 1)	1.24	1.68	3.41	4.8	6.2	6.9	7.44	6.51	5.1	3.41	1.8	0.93
Crop Coefficient (k_c) (see note 2)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Crop water demand per acre [inches]	0.74	1.01	2.05	2.88	3.72	4.14	4.46	3.91	3.06	2.05	1.08	0.56
Crop water demand per acre [gallons]	20,201	27,370	55,554	78,199	101,007	112,411	121,208	106,057	83,086	55,554	29,325	15,151
Total crop water demand for irrigated area [gallons]	36,160	48,992	99,441	139,976	180,802	201,216	216,963	189,843	148,725	99,441	52,491	27,120
Will landscape be irrigated with reclaimed water this month?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Process wastewater remaining after vineyard irrigation, reclaimed for landscape irrigation [gallons]	9,518	9,518	13,863	0	0	0	0	0	0	0	10,863	10,863
Landscape irrigation water required from storage or other source [gallons]	26,643	39,474	85,579	139,976	180,802	201,216	216,963	189,843	148,725	99,441	41,628	16,258
Drawdown from storage for landscape irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Process wastewater generated this month, unused for irrigation, to be reclaimed and stored [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Net end-of-month reclaimed water storage after all irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0

End of Water Balance

Peak Minimum Monthly Storage = 0 gallons

Notes:

1. Reference ETo from California Irrigation Management Information System
2. Crop Coefficient from Table 1 of "Estimating Irrigation Water Needs of Landscape Plantings in California", University of California Cooperative Extension, August 2000.

THE INN AT THE ABBEY
WINERY PROCESS WASTEWATER VINEYARD IRRIGATION

LEGEND

AREA OF VINEYARD & COVER CROP AVAILABLE FOR TREATED PROCESS WASTEWATER (1.79 ACRES)

100' WELL SETBACK

NOTE

NORTH PARCEL INTERNAL PROPERTY LINES NOT SHOWN FOR CLARITY

GRAPHIC SCALE

120 0 120 240

(IN FEET)
1 inch = 120 FT

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

DEC. 19, 2019 4111050.2 Exh-Winery PWW Vyd Irrig.dwg

APPENDIX 6

Napa County Unit Rates – Table 4

TABLE 4

TYPE OF OCCUPANCY	GALLONS PER DAY
Airports	**5 per passenger**
Campgrounds: **Campground with central comfort station** **Campground with flush toilet, no showers** **Day Camps (no meals)** **Luxury Camp, private bath** **Summer and seasonal**	 **35 per person** **25 per person** **15 per person** **100 per person** **50 per person**
Churches (sanctuary) **With kitchen wastes**	**5 per seat** **7 per seat**
Country Club	**125 per person**
Factories	**35 per person per shift**
Hospitals **Kitchen waste only** **Laundry waste only**	**250 per bed space** **25 per bed** **40 per bed**
Hotels/Motels with private bathroom (no kitchen waste) **Hotels/Motels without private bathroom (no kitchen waste)** **Hotel/Motel with private bath and kitchen**	**60 per two person room** **50 per two person room** **75 gallons per person**
Institutions other than hospitals	**125 per bed space**
Movie Theaters	**5 per seat**
Offices	**20 per employee**
Picnic parks with toilets and showers **Picnic parks with toilet waste only**	**10 per person** **5 per person**
Resort camps with limited plumbing	**50 gallons per person**
Restaurants: **Kitchen waste (multi-use utensils)** **Kitchen waste (disposable utensils)** **And add the following for type of facility present:** **Conventional sit down** **Short Order** **Bar and Cocktail**	 **5 per meal served** **3 per meal served** **10 per person** **8 per person** **3 per person**
School (non-boarding **With gym and showers add** **With cafeteria using disposable utensils**	**20 per student** **5 per student** **3 per meal served**
Self service laundries	**50 gallons per wash**
Service station	**10 gallons per vehicle served**
Retail stores **For public restrooms add**	**20 per employee** **1 per 10 square feet**
Swimming pools and bathhouses	**10 per person**
Tourist camps or mobile home parks with individual bath units **Tourist camps or trailer parks with central bathhouse**	**100 per person** **75 per person**
Work or construction camps (semi-permanent)	**50 per person**
Wine tasting facility (no meals served)	**3 per person**
Employee	**15 per employee**

Appendix K

Environmental Noise and Vibration Assessment

INN AT THE ABBEY ENVIRONMENTAL NOISE AND VIBRATION ASSESSMENT

Napa County, California

February 12, 2019

Prepared for:

Geoff Scott
Jackson Family Investments
425 Aviation Boulevard
Santa Rosa, CA 95403

Prepared by:

Carrie J. Janello and
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400

Project: 17-034

TABLE OF CONTENTS

INTRODUCTION 1
SETTING ..... **Error! Bookmark not defined.**
Regulatory Background 1
Existing Noise Environment 9
GENERAL PLAN CONSISTENCY ANALYSIS 15
NOISE IMPACTS AND MITIGATION MEASURES 20
Significance Criteria 20
APPENDIX 39
Fundamentals of Environmental Noise 39
Effects of Noise 40
Fundamentals of Groundborne Vibration 41

INTRODUCTION

A new boutique hotel ("Inn at the Abbey") is proposed in unincorporated Napa County, California, at the historic Freemark Abbey property.. The site consists of five parcels, totaling 13.8 acres. Current winery and commercial operations occur at the project site and will continue to occur under future project conditions. The existing retail space on the main level of the Stone Building shall serve as the hotel's guest lobby, lounge, and retail shop. Existing winery spaces on the cellar level of the Stone Building are planned as hotel event spaces. The proposed development plan proposes six new buildings that will accommodate the following amenities: 79 guest rooms, hotel-focused retail space, a spa with four treatment rooms, a pool, underground parking, a rooftop terrace, a fitness room, and various back of house spaces. Access to the site would be along both St. Helena Highway (SR 29) and Lodi Lane.

This report evaluates the project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into three sections: 1) the Setting Section summarizes applicable regulatory criteria and discusses the results of the ambient noise monitoring survey completed to document existing noise conditions; 2) the General Plan Consistency Section discusses noise and land use compatibility utilizing policies in the County's General Plan; and, 3) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents mitigation measures, where necessary, to provide a compatible project in relation to adjacent noise sources and land uses. The Appendix provides a brief description of the fundamentals of environmental noise for those unfamiliar with acoustical concepts or terminology.

SETTING

Regulatory Background

The State of California and Napa County have established regulatory criteria that are applicable in this assessment. The State CEQA Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies;

(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

(e) For a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels; or

(f) For a project within the vicinity of a private airstrip, if the project would expose people residing or working in the project area to excessive noise levels.

Pursuant to recent court decisions, the impacts of site constraints such as exposure of the proposed project to excessive levels of noise and vibration are not included in the Impacts and Mitigation Section of this report. Checklist item (a), regarding the compatibility of the project with noise levels at the site, is discussed in the General Plan Consistency section of the report. Checklist items (a) through (d) are applicable in the assessment of potential impacts resulting from the proposed project at off-site receptors. Checklist items (e) and (f) are not applicable to this project because the project is not located within an airport land use plan, is not within two miles of an airport, and is not in the vicinity of a private air strip.

CEQA does not define what noise level increase would be considered substantial. Typically, an increase in the L_{dn} noise level resulting from the project at noise sensitive land uses of 3 dBA or greater would be considered a significant impact when projected noise levels would exceed those considered acceptable for the affected land use. An increase of 5 dBA L_{dn} or greater would be considered a significant impact when projected noise levels would remain within those considered acceptable for the affected land use.

2008 Napa County General Plan. The Community Character Element of the 2008 Napa County General Plan sets forth goals and policies to protect people from exposure to excessive noise. Goals and policies contained in this document that are relevant to this project are as follows:

Goal CC-7: Accept those sounds which are part of the County's agricultural character while protecting the people of Napa County from exposure to excessive noise.

Goal CC-8: Place compatible land uses where high noise levels already exist and minimize noise impacts by place new noise-generating uses in appropriate areas.

Policy CC-35: The noises associated with agriculture, including agricultural processing, are considered an acceptable and necessary part of the community character of Napa County, and are not considered to be undesirable provided that normal and reasonable measures are taken to avoid significantly impacting adjacent uses.

Policy CC-36: Residential and other noise-sensitive activities shall not be located where noise levels exceed the standards contained in this Element without provision of noise attenuation features that result in noise levels meeting the current standards of the County for exterior and interior noise exposure.

Policy CC-37: The County shall seek to limit excessive noise impacts of recreational uses—including motorboats, shooting ranges, motorcycles, and other noise-producing equipment—through the enforcement of applicable laws (such as requirements for mufflers) and limits on the location and/or extent of such uses.

Policy CC-38: The following are the County's standards for maximum exterior noise levels for various types of land uses established in the County's Noise Ordinance. Additional standards are provided in the Noise Ordinance for construction activities (i.e., intermittent or temporary noise).

EXTERIOR NOISE LEVEL STANDARDS
(LEVELS NOT TO BE EXCEEDED MORE THAN 30 MINUTES IN ANY HOUR)

Land Use Type	Time Period	Noise Level (dBA) by Noise Zone Classification		
		Rural	Suburban	Urban
Single-Family Homes and Duplexes	10 p.m. to 7 a.m.	45	45	50
	7 a.m. to 10 p.m.	50	55	60
Multiple Residential 3 or More Units Per Building (Triplex +)	10 p.m. to 7 a.m.	45	50	55
	7 a.m. to 10 p.m.	50	55	60
Office and Retail	10 p.m. to 7 a.m.	60		
	7 a.m. to 10 p.m.	65		
Industrial and Wineries	Anytime	75		

a) For the purposes of implementing this policy, standards for residential uses shall be measured at the housing unit in areas subject to noise levels in excess of the desired levels shown above.

b) Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction at the industrial use.

c) Where projected noise levels for a given location are not included in this Element, site-specific noise modeling may need to be conducted in order to apply the County's Noise policies.

d) For further information, see the County Noise Ordinance.

Policy CC-39: The following are noise compatibility guidelines for use in determining the general compatibility of planned land uses:

NOISE COMPATIBILITY GUIDELINES
(EXPRESSED AS A 24-HOUR DAY-NIGHT AVERAGE OR LDN)

Land Use	Completely Compatible	Tentatively Compatible	Normally Incompatible	Completely Incompatible
Residential	Less than 55 dBA	55-60 dBA	60-75 dBA	Greater than 75 dBA
Commercial	Less than 65 dBA	65-75 dBA	75-80 dBA	Greater than 80 dBA
Industrial	Less than 70 dBA	70-80 dBA	80-85 dBA	Greater than 85 dBA

Policy CC-42: The following are the County's standards for acceptable indoor intermittent noise levels for various types of land uses. These standards should receive special attention when projects are considered in "Tentatively Compatible" or "Normally Incompatible" areas as determined by Policies CC-39 and CC-43, and new uses shall incorporate design features to ensure that these standards are met.

INTERIOR NOISE LEVEL CRITERIA FOR INTERMITTENT NOISE

Land Use Type	Acceptable Noise Level (dBA CNEL)
Residential (Single- and Multi-Family)	
Living Areas, Daytime	60 dBA
Living Areas, Nighttime	55 dBA
Sleeping Areas	45 dBA
School Classrooms or Library	55 dBA
Church Sanctuary	45 dBA
Commercial, Educational, Office, Light and Heavy Industrial, Warehousing	Conform with applicable state and federal workplace safety standards

Policy CC-43: The following definitions shall be used in combination with the standards in the Noise Compatibility Guidelines shown above.

a) "Completely Compatible" means that the specified land use is satisfactory and both the indoor and outdoor environments are pleasant.

b) "Tentatively Compatible" means that noise exposure may be of concern, but common building construction practices will make the indoor living environment acceptable, even for sleeping quarters, and the outdoor environment will be reasonably pleasant.

c) "Normally Incompatible" means that noise exposure warrants special attention, and new construction or development should generally be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. Careful site planning or exterior barriers may be needed to make the outdoor environment tolerable.

d) "Completely Incompatible" means that the noise exposure is so severe that new construction or development should generally not be undertaken.

Policy CC-45: Development in the area covered by any Airport Land Use Compatibility Plan (ALUCP) shall be consistent with the noise levels projected for the airport. Where necessary, noise insulation or other measures shall be included to maintain desired interior noise levels.

Policy CC-47: Where feasible, the County should embrace new technologies to address existing and potential future noise sources. For example, use of rubberized asphalt concrete in roadway resurfacing can reduce noise levels experienced by nearby residents.

Policy CC-48: Where proposed commercial or industrial land uses are likely to produce noise levels exceeding the standards contained in this Element at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy CC-49: Consistent with the County's Noise Ordinance, ensure that reasonable measures are taken such that temporary and intermittent noise associated with construction and other activities does not become intolerable to those in the area. Construction hours shall be limited per the requirements of the Noise Ordinance. Maximum acceptable noise limits at the sensitive receptor are defined in Policies CC-35, CC-36, and CC-37.

Napa County Noise Ordinance. The Napa County Noise Ordinance Sections 8.16.060 and 8.17.070 provide maximum permissible dwelling interior sound levels and maximum permissible exterior levels, respectively.

Section 8.16.060 Interior Noise Standards

A. Maximum Permissible Dwelling Interior Sound Levels. The interior noise standards for residential dwelling units generated by noise sources outside the dwelling unit, as presented in Table 8.16.060 shall apply, unless otherwise specifically indicated, within all such dwelling units.

TABLE 8.16.060 Interior Noise Limits

Noise Zone	Type of Land Use	Time Interval	Allowable Interior Noise Level (dBA)
All	Residential	10:00 p.m. – 7:00 a.m.	55 dBA
		7:00 a.m. – 10:00 p.m.	60 dBA

B. No person shall operate or cause to be operated within a dwelling unit any source of sound or allow the creation of any noise, which causes the noise level, when measured inside a neighboring receiving dwelling unit, to exceed:

1. The noise standard as specified in Table 8.16.060 above for a cumulative period of more than five minutes in any hour; or

2. The noise standard plus five dB for a cumulative period of more than one minute in any hour; or

3. The noise standard plus ten dB or the maximum measured ambient, for any period of time.

Section 8.16.070 Exterior Noise Limits

A. Maximum Permissible Sound Levels by Receiving Land Use.

1. The noise standard for the various categories of land use identified by the noise control officer, as presented in Tables 8.16.060 and 8.16.070 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

2. No person shall operate, or cause to be operated, any source of sound at any location within the unincorporated area of the county, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed:

    a. The noise standard for that land use as specified in Table 8.16.070 for a cumulative period of more than thirty minutes in any hour (equivalent to the L_{50} noise metric); or

    b. The noise standard plus five dB for a cumulative period of more than fifteen minutes in any hour (equivalent to the L_{25} noise metric); or

    c. The noise standard plus ten dB for a cumulative period of more than five minutes in any hour (equivalent to the L_{08} noise metric); or

    d. The noise standard plus fifteen dB for a cumulative period of more than one minute in any hour (equivalent to the L_{02} noise metric);

    e. The noise standard plus twenty dB or the maximum measured ambient level, for any period of time (equivalent to the L_{max} noise metric).

3. If the measured ambient noise level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be the ambient noise level.

4. If the measurement location is on a boundary between two different zones, the sound level limit applicable to the quieter noise zone shall apply.

5. Wherever possible, the ambient noise level shall be measured at the same location along the property line utilized in subsection (A)(2) with the alleged offending noise source inoperative. If the intruding noise source is continuous and cannot reasonably

be discontinued or stopped for a time period sufficient to measure the ambient noise level, the ambient noise level may be determined by traveling away from the noise source to a point where a steady-state decibel reading is achieved. If this test is not possible, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

B. Correction for Character of Sound. In the event the alleged offensive noise, as judged by the noise control officer, contains a steady, audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech, the standard limits set forth in Tables 8.16.060 and 8.16.070 shall be reduced by five dB, but not lower than forty-five.

TABLE 8.16.070 Exterior Noise Limits (Levels not to be exceeded more than 30 minutes in any hour)

		Noise Level (dBA) Noise Zone Classification[1]		
Receiving Land Use Category	**Time Period**	**Rural**	**Suburban**	**Urban**
Residential Single and Double	10:00 p.m. – 7:00 a.m.	45 dBA	45 dBA	50 dBA
	7:00 a.m. – 10:00 p.m.	50 dBA	55 dBA	60 dBA
Residential Multiple and Country	10:00 p.m. – 7:00 a.m.	45 dBA	50 dBA	55 dBA
	7:00 a.m. – 10:00 p.m.	50 dBA	55 dBA	60 dBA
Commercial	10:00 p.m. – 7:00 a.m.	60 dBA		
	7:00 a.m. – 10:00 p.m.	65 dBA		
Industrial, including wineries	Anytime	75 dBA		

[1] The classification of different areas of the county in terms of environmental noise zones shall be determined by the NCO, based upon assessment of county noise survey data. Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction within the zone.

Section 8.16.080 Specific Types of Noise Prohibited

A. Noise Disturbance Prohibited. No person shall unnecessarily make, continue or cause to be made or continued any noise disturbance.

B. Specific Prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

2. Construction or Demolition.

a. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of seven p.m. and seven a.m., such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public

service utilities or by variance issued by the appropriate authority. This subsection shall not apply to the use of domestic power tools, as specified in subsection (B)(3) of this section.

b. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule:

TABLE 8.16.080 Noise Limits for Construction Activities

	Residential	**Commercial**	**Industrial**
Daily: 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily 7:00 p.m. to 7:00 a.m.	60 dBA	65 dBA	70 dBA

3. Domestic Power Tools – Machinery.

   a. Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool between ten p.m. and seven a.m. so as to create a noise disturbance across a residential or commercial real property line;

   b. Any motor, machinery or pump, such as swimming pool equipment, etc., shall be sufficiently enclosed or muffled and maintained so as not to create a noise disturbance in accordance with subsection (A) of Section 8.16.060 or subsection (A) of 8.16.070.

4. Loading and Unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of ten p.m. and six a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of subsection (A) of Section 8.16.060 or subsection (A) of Section 8.16.070.

5. Loudspeakers, Amplified Sound. Using or operating for any purpose any loudspeaker, loudspeaker system or similar device, such that the sound therefrom creates a noise disturbance, or at any time violates the provisions of subsection (A) of Section 8.16.060 or subsection (A) of Section 8.16.070, except for any activity for which a variance has been issued by the NCO.

6. Powered Motor Vehicles. Operating or permitting the operation of powered model vehicles so as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of subsection (A) of Section 8.16.060 or subsection (A) of Section 8.16.070.

7. Radios, Television Sets, Musical Instruments and Similar Devices. Operating, playing or permitting the operation or playing of any radio, television set, phonograph, drum,

musical instrument, or similar device which produces or reproduces sound in such a manner as to create a noise disturbance, or at any time to violate the provisions of subsection (A) of Section 8.16.060 or subsection (A) of Section 8.16.070, except for activities for which a variance has been issued by the NCO.

Section 8.16.090 Exemptions to Noise Regulations

D. Exemptions from Exterior Noise Standards. The provisions of Table 8.16.070 shall not apply to activities covered by the following sections:

1. Street sales;
2. Animals;
3. Construction/demolition;
4. Domestic power tools, machinery;
5. Tampering.

Existing Noise Environment

The Inn at the Abbey project site is located in unincorporated Napa County, California, east of St. Helena Highway, and to the north and south of Lodi Lane. The existing site is currently developed with buildings and offices affiliated with winery operations, restaurant, commercial and motel uses. Some of these buildings will remain under future project conditions, while some will be demolished. The area surrounding the project site consists of single- and multi-family residences, agricultural land, a hotel, and wineries.

A noise monitoring survey was performed at the site beginning on Tuesday, March 28, 2017 and concluding on Thursday, March 30, 2017. The monitoring survey included two long-term and three short-term noise measurements, as shown in Figure 1. The noise environment at the site results primarily from vehicular traffic along St. Helena Highway. Local traffic along Lodi Lane also contributes to the ambient noise environment.

Long-term noise measurement LT-1 was made in the existing vineyard north of Lodi Lane near an existing single-family residence. LT-1 was approximately 35 feet from the edge of the access roadway and approximately 165 feet north of the centerline of Lodi Lane. Hourly average noise levels at LT-1 typically ranged from 46 to 58 dBA L_{eq} during the daytime hours and from 39 to 53 dBA L_{eq} during the nighttime hours. Noise levels in the late evening hours were likely elevated due to the sounds produced by insects or wildlife. The day-night average noise level measured on Wednesday, March 29, 2017 was 56 dBA L_{dn}. The daily trend in noise levels at LT-1 is shown in Figures 2 through 4.

Noise measurement LT-2 was made from a tree located along St. Helena Highway, approximately 255 feet south of the centerline of Lodi Lane and approximately 35 feet east of the centerline of

St. Helena Highway. Hourly average noise levels at LT-2 typically ranged from 68 to 76 dBA L_{eq} during the daytime hours and from 58 to 75 dBA L_{eq} during the nighttime hours. The day-night average noise level measured on Wednesday, March 29, 2017 was 76 dBA L_{dn}. The daily trend in noise levels at LT-2 is shown in Figures 5 through 7.

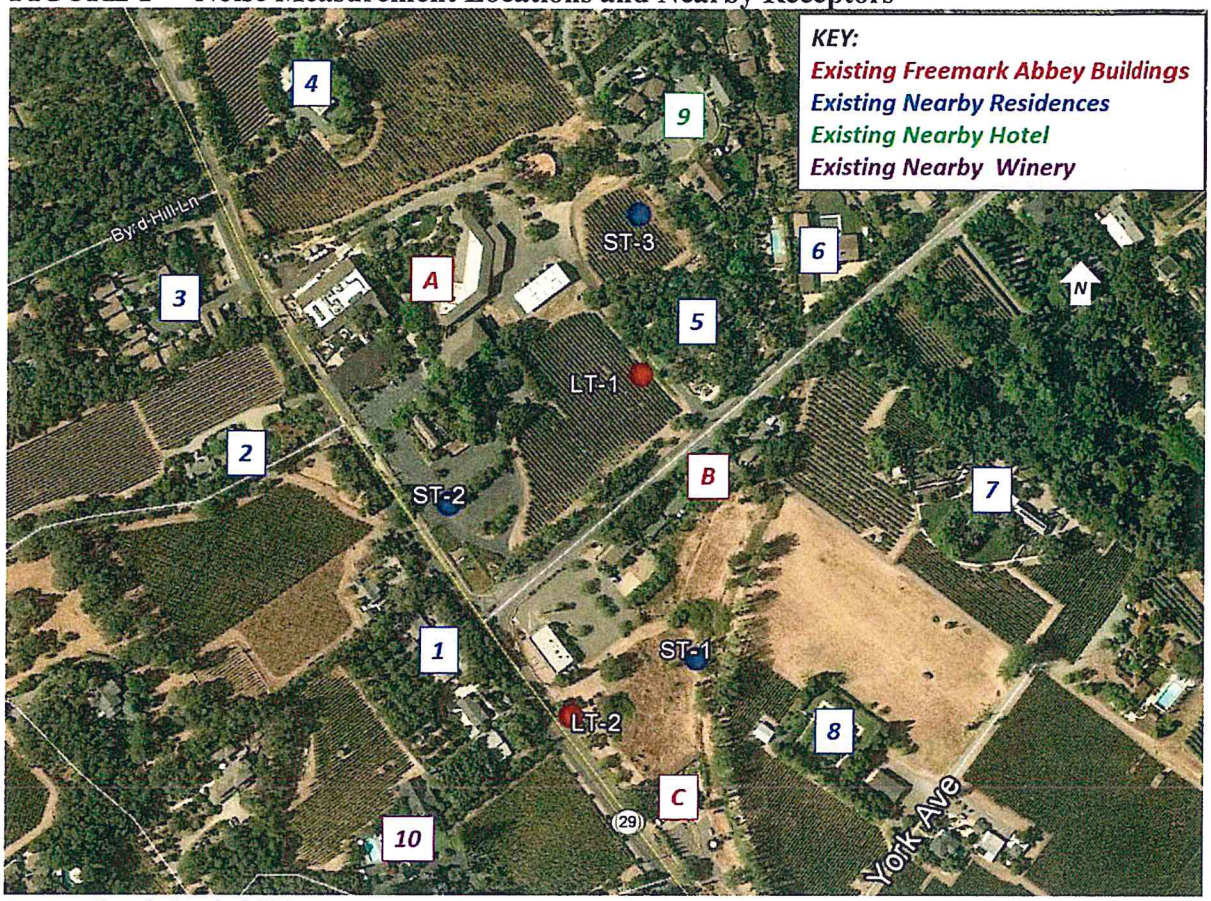
Each of the short-term noise measurements were made in ten-minute intervals on Tuesday, March 28, 2017, between 1:30 p.m. and 2:20 p.m. ST-1 was made along the southern boundary of the project site, approximately 305 feet east of the centerline of St. Helena Highway and approximately 330 feet south of the centerline of Lodi Lane. During the measurement, the maximum instantaneous noise level was about 64 dBA, which was generated by a heavy truck pass-by. The ten-minute average noise level measured at ST-1 was 56 dBA $L_{eq(10\text{-}min)}$, and the estimated day-night average noise level was 58 dBA L_{dn}. ST-2 was made from the existing parking lot located along the western boundary of the project site. ST-2 was approximately 80 feet east of the centerline of St. Helena Highway. A heavy truck applying the engine break caused noise levels to reach 83 dBA during the pass-by. The ten-minute average noise level measured at ST-2 was 67 dBA $L_{eq(10\text{-}min)}$, and the estimated day-night average noise level was 67 dBA L_{dn}. The final short-term noise measurement, ST-3, was made from the existing vineyard east of the existing winery buildings. ST-3 was approximately 410 feet north of the centerline of Lodi Lane. The ten-minute average noise level measured at ST-3 was 50 dBA $L_{eq(10\text{-}min)}$, and the estimated day-night average noise level was 55 dBA L_{dn}. Table 1 summarizes the results for the short-term measurements.

TABLE 1 Summary of Short-Term Noise Measurement Data

Noise Measurement Location	Date, Time	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}	L_{dn}[a]
ST-1: Southern boundary of the project site	3/28/2017, 13:30-13:40	64	60	58	55	52	56	58
ST-2: ~80 feet east of the St. Helena Highway centerline	3/28/2017, 13:50-14:00	83	76	68	64	58	67	67
ST-3: ~405 feet north of the Lodi Lane centerline	3/28/2017, 14:10-14:20	60	56	53	49	47	50	55

[a] L_{dn} was approximated by correlating to corresponding period at long-term site.

FIGURE 1 Noise Measurement Locations and Nearby Receptors



Source: Google Earth, 2017.

FIGURE 2 Daily Trends in Noise Levels at LT-1, Tuesday, March 28, 2017

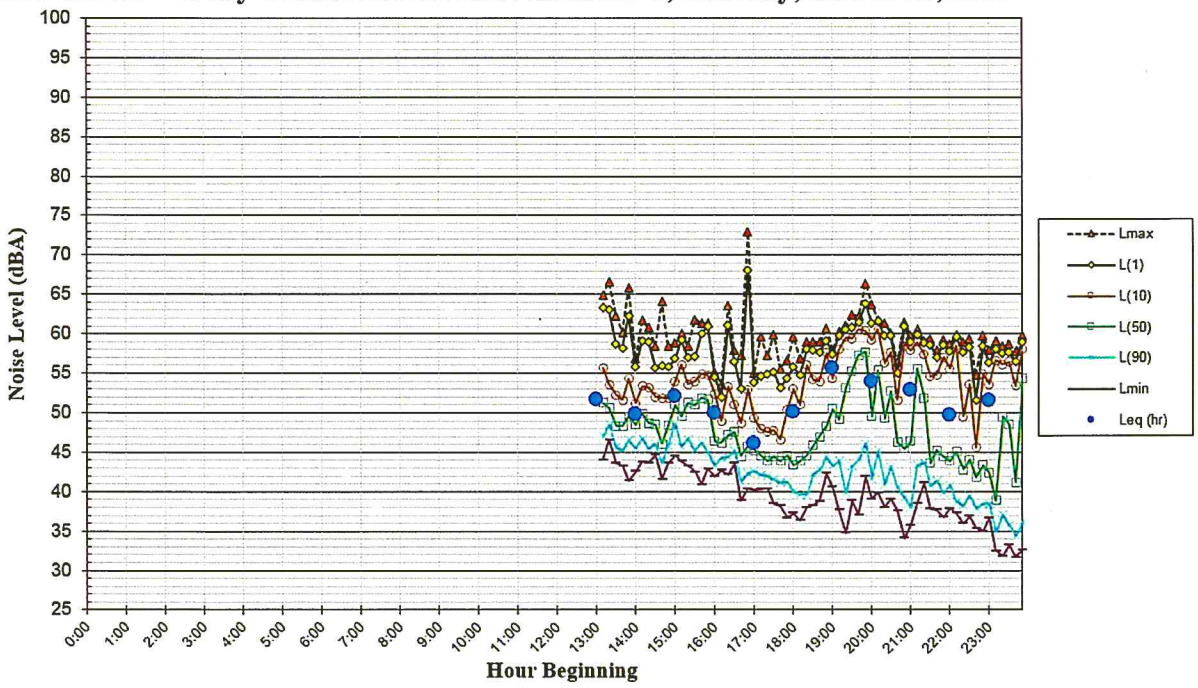


FIGURE 3 Daily Trends in Noise Levels at LT-1, Wednesday, March 29, 2017

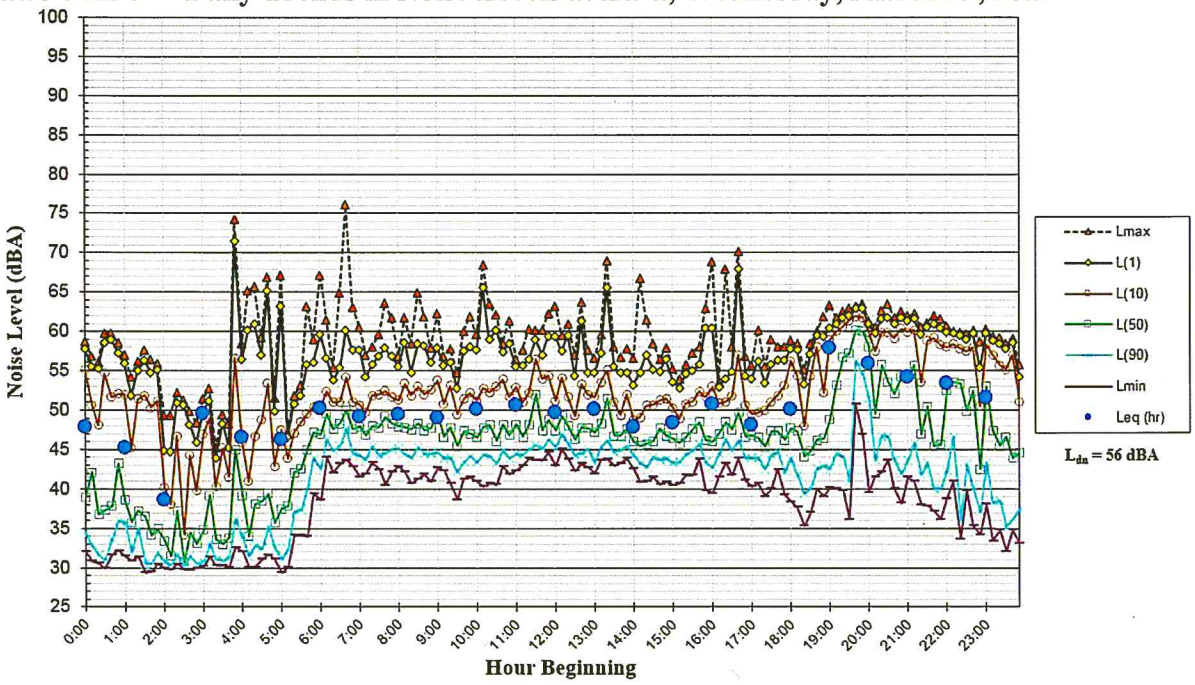


FIGURE 4 Daily Trends in Noise Levels at LT-1, Thursday, March 30, 2017

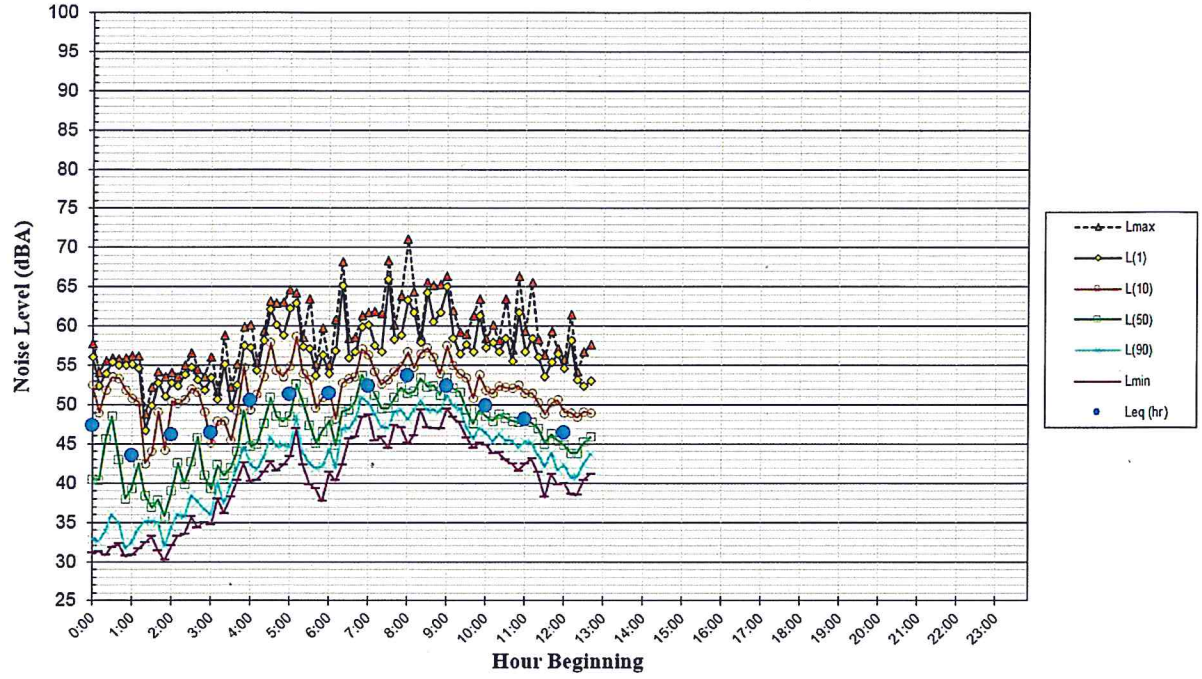


FIGURE 5 Daily Trends in Noise Levels at LT-2, Tuesday, March 28, 2017

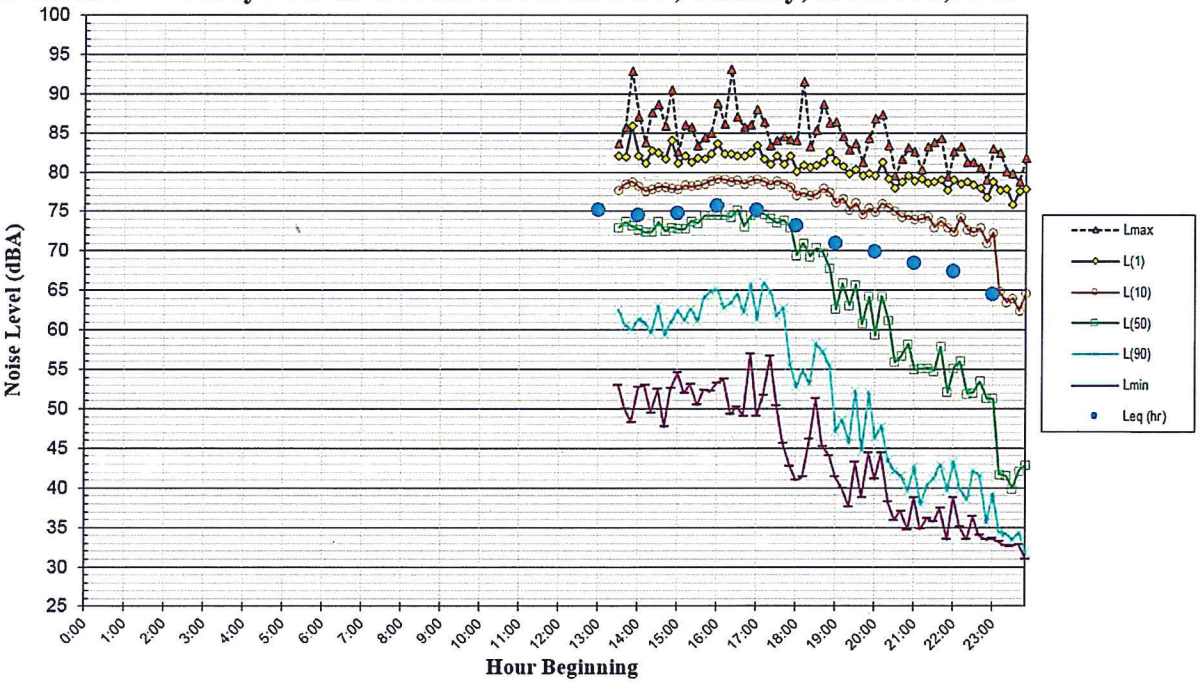


FIGURE 6 Daily Trends in Noise Levels at LT-2, Wednesday, March 29, 2017

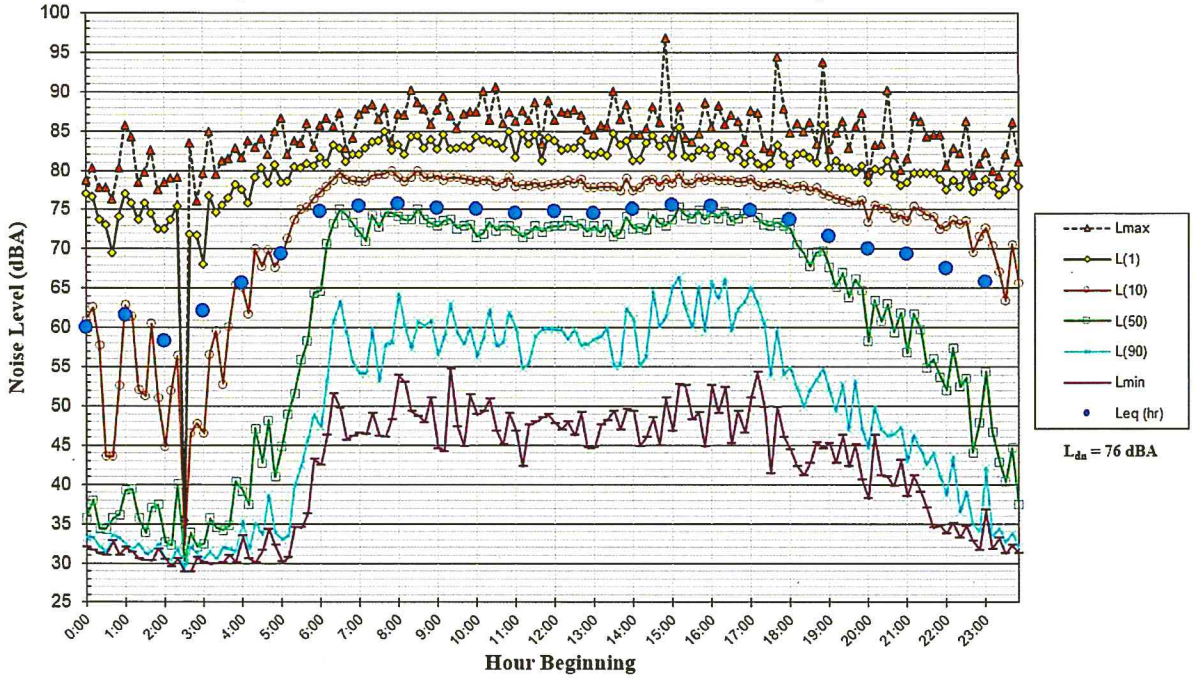
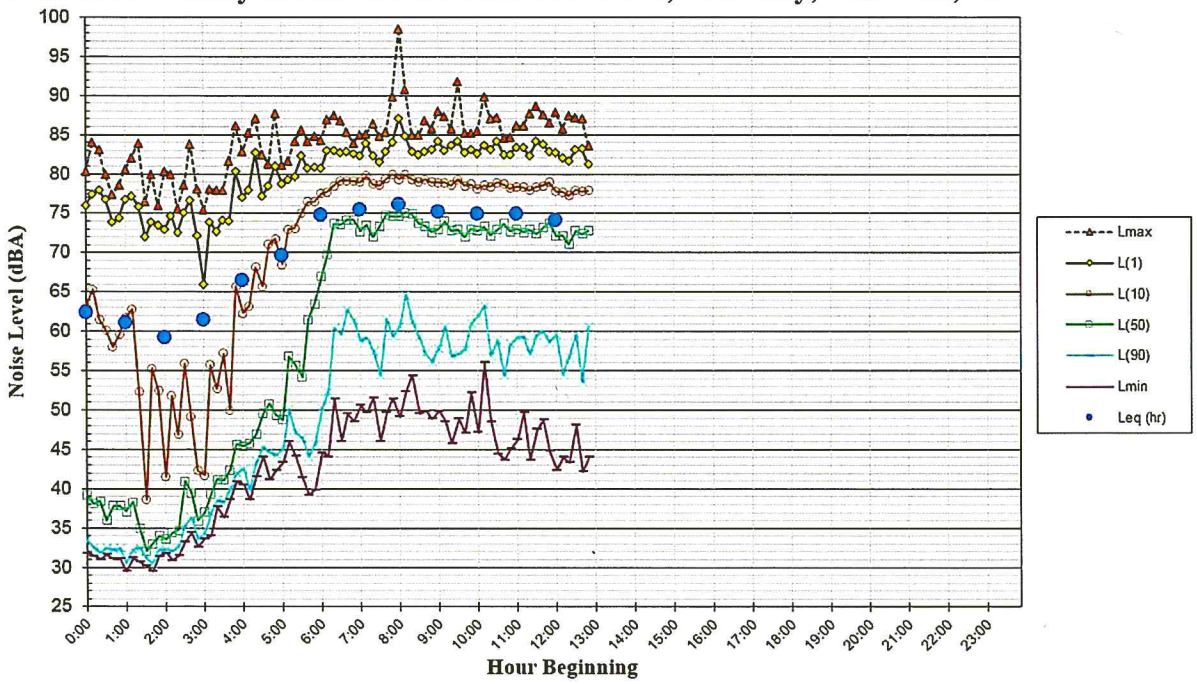


FIGURE 7 Daily Trends in Noise Levels at LT-2, Thursday, March 30, 2017



GENERAL PLAN CONSISTENCY ANALYSIS – COMPATIBILITY OF PROJECT WITH NOISE ENVIRONMENT AFFECTING THE SITE

Policy CC-39 of the Napa County General Plan establishes noise compatibility guidelines for residential, commercial, and industrial land uses. The hotel would be considered a commercial land use. Therefore, the exterior noise levels at commercial outdoor use areas are required to be maintained at or below 65 dBA L_{dn} to be considered "completely compatible" with the noise environment. These noise standards would apply to community outdoor recreational areas and not to private decks or balconies. For interior noise and land use compatibility, noise levels should be maintained at or below 45 dBA L_{dn}.

The future noise environment at the project site would continue to result primarily from traffic along St. Helena Highway and Lodi Lane. In 2017, *W-Trans* completed a traffic impact study for the Freemark Abbey Winery Project.[1] Comparing the peak hour traffic volumes on weekdays and weekends under future plus project conditions to the existing peak hour traffic volumes, the traffic noise increase along St. Helena Highway in the project vicinity is calculated to be 1 dBA on weekdays and weekends. The traffic noise increase along Lodi Lane is calculated to be 1 dBA on weekdays and 2 dBA on weekends. Therefore, the future day-night average noise levels under worst-case conditions at LT-1 would be 59 dBA L_{dn}, and the future noise levels under worst-case conditions at LT-2 would be 77 dBA L_{dn}.

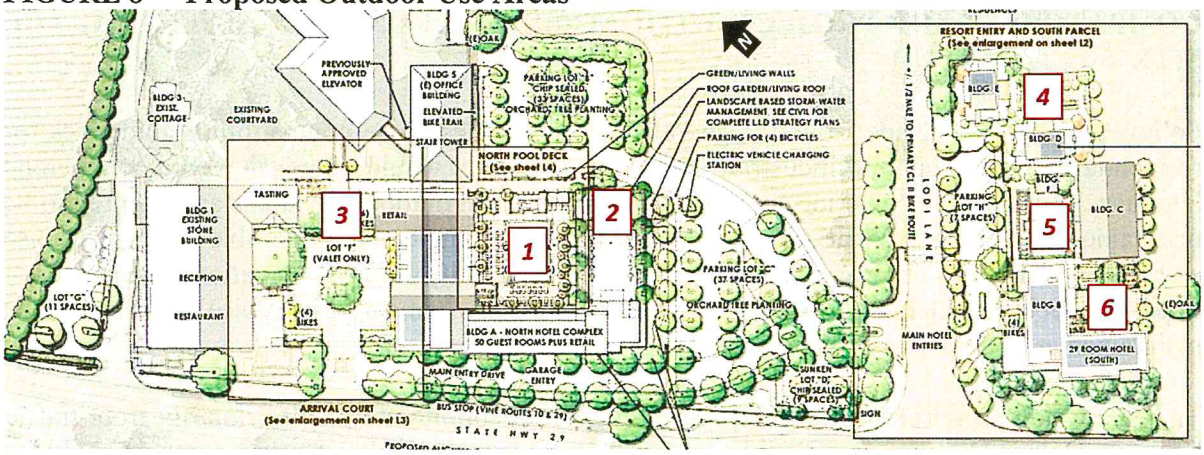
Future Exterior Noise Environment

The proposed project would construct a hotel with 79 guest rooms and several common outdoor use areas. Figure 8 shows the project site plan with the outdoor use areas identified as areas 1 through 7. On the parcel north of Lodi Lane, 50 hotel rooms would surround a pool area, which is identified in Figure 8 as outdoor use area 1. The main hotel building would also include a rooftop terrace on the southernmost portion of the building, which is labeled as area 2 in Figure 8. The outdoor uses associated with the existing buildings would remain unchanged with the project and are not included in this assessment. However, a new deck area with a water feature and lounge area, identified in Figure 8 as outdoor area 3, is assessed as part of this analysis.

On the south parcel, outdoor use areas would include the meadow with a patio and fireplace along the eastern boundary (identified as area 4 in Figure 8); a pool area with a sundeck and hot tub (area 5 in Figure 8); and a south lawn area to the south of Building C (area 6 in Figure 8). Noise levels at each of these outdoor activity areas are assessed below.

[1] W-Trans, "Traffic Impact Study for the Freemark Abbey Winery Project," 2017.

FIGURE 8 Proposed Outdoor Use Areas



North Parcel

The pool area (area 1 in Figure 8) would be surrounded by the primary hotel building (identified as Building A in the project description) on the north parcel. The multi-story intervening building would provide shielding from traffic along St. Helena Highway and Lodi Lane for the pool area and the other surrounding outdoor amenities. With setbacks ranging from 120 to 220 feet from the centerline of St. Helena Highway, the future exterior noise levels at the north parcel pool and the surrounding outdoor amenities would be less than 60 dBA L_{dn} under worst-case conditions.

The rooftop terrace (area 2 in Figure 8), which would be located on Building A along the southern and eastern façades, would be partially shielded from traffic noise along St. Helena Highway by intervening hotel rooms. This outdoor use area would have setbacks from the centerline of St. Helena Highway ranging from approximately 125 to 190 feet. At these setbacks, and assuming partial shielding from the building, the future exterior noise levels at the rooftop terrace would be at or below 63 dBA L_{dn}.

The new proposed deck area on the north parcel (area 3 in Figure 8) would be located at the eastern end of the courtyard, between the existing winery buildings and the proposed Building A. The setback of this outdoor use area would range from 175 to 200 feet from the centerline of St. Helena Highway. At these distances and assuming partial shielding from the surrounding buildings, the future exterior noise levels at this outdoor use area would be 64 dBA L_{dn} or less.

South Parcel

On the south parcel, each of the outdoor use areas would be at least partially shielded from traffic noise along St. Helena Highway by the intervening project buildings. Additionally, outdoor areas 4 and 6 would be at least partially shielded by traffic noise along Lodi Lane, while the pool area (outdoor area 5) would have direct line-of-sight to this roadway.

The pool area located on the south parcel (area 5 in Figure 8) would be set back from Lodi Lane by 80 to 125 feet. At these distances, the future exterior noise levels at the south parcel pool area would be at or below 63 dBA L_{dn}. With setbacks similar or greater to area 5, as well as additional shielding from intervening buildings, the future exterior noise levels at outdoor use areas 4 and 6 would be at or below 60 dBA L_{dn}.

Therefore, the outdoor use areas associated with the proposed project would be compatible with the noise environment at the site.

Future Interior Noise Environment

Interior noise levels would vary depending upon the design of the buildings (relative window area to wall area) and the selected construction materials and methods. Standard commercial hotel construction provides approximately 20 to 25 dBA of exterior-to-interior noise reduction, assuming windows are closed. For exterior noise environments ranging from 65 to 70 dBA L_{dn}, interior noise levels can typically be maintained below 45 dBA L_{dn} with the incorporation of an adequate forced-air mechanical ventilation system in each hotel room, allowing the windows to be closed.

North Parcel

The proposed Building A, which is identified in Figure 8, has direct line-of-sight to St. Helena Highway, with setbacks ranging from 80 feet along the western façade to 225 feet along the eastern façade. However, an indoor hallway would be along the façade facing the highway (the western façade). The hotel rooms on this side of the hotel would face the pool area on the interior of the site and would not have an exterior wall assembly facing St. Helena Highway. Assuming standard construction materials for commercial hotel buildings, the future interior noise levels at the rooms in Building A located along the western façade would be at or below 45 dBA L_{dn} assuming that the interior hallway would be located between the rooms and the highway.

There would be exterior-facing rooms along the southern and northern (on the upper floors) façades of Building A that would be exposed to direct traffic noise from St. Helena Highway. The setbacks of these rooms would range from 80 to 225 feet. At these setbacks, the exterior-facing rooms would be exposed to future exterior noise levels ranging from 67 to 73 dBA L_{dn}. Assuming standard construction materials for commercial hotel buildings, the future interior noise levels at the rooms in Building A would range from 47 to 53 dBA L_{dn}.

The remaining rooms, which overlook the pool area at Building A, would be located on the interior of the site and therefore would receive adequate shielding from the exterior-facing wall assemblies. The future interior noise levels at these rooms would be at or below 45 dBA L_{dn}.

South Parcel

Similar to Building A on the north parcel, Building B (see Figure 8) on the south parcel would be adjacent to St. Helena Highway and would have an interior hallway along the façade facing the highway between the rooms facing the eastern façade. However, the corner units located along the northern and southern building façades would have direct exposure to roadway noise. The setbacks of these façades would range from 85 to 115 feet. At these distances, the corner units would be exposed to future exterior noise levels ranging from 72 to 73 dBA L_{dn}; therefore, future interior noise levels at the corner units would range from 52 to 53 dBA L_{dn}, assuming standard construction materials and methods. The remaining units, assuming an interior hallway separates the hotel rooms from direct exposure to St. Helena Highway traffic noise, would have future interior noise levels at or below 45 dBA L_{dn} with standard construction materials.

Building C (see Figure 8), which is located to the south of the pool area, would be partially shielded from St. Helena Highway traffic noise by an intervening hotel building but would have direct line-of-sight to traffic noise along Lodi Lane. With setbacks from the centerline of St. Helena Highway ranging from about 200 to 270 feet and setbacks from the centerline of Lodi Lane ranging from about 135 to 195 feet, these hotel rooms would be exposed to future exterior noise levels at or below 65 dBA L_{dn}. Assuming standard construction materials and methods, these rooms would have future interior noise levels at or below 45 dBA L_{dn}.

Along the eastern boundary of the south parcel, the building adjacent to Lodi Lane (Building E in Figure 8) would have setbacks from the centerline of the roadway ranging from 40 to 80 feet. At these distances, the units in this building would be exposed to future exterior noise levels ranging from 63 to 66 dBA L_{dn}. Assuming standard construction materials and methods, the units in this building would have future interior noise levels ranging from below 45 to 46 dBA L_{dn}.

The final building (Building D), which is located to the east of the pool area as shown in Figure 8, would be mostly shielded from traffic noise along St. Helena Highway but would have direct line-of-sight to Lodi Lane, with setbacks from the centerline ranging from 85 to 140 feet. At these distances, the hotel rooms would be exposed to future exterior noise levels ranging from 60 to 63 dBA L_{dn}. Assuming standard construction materials, the units in this building would have future interior noise levels below 45 dBA L_{dn}.

Noise Insulation Features to Reduce Future Interior Noise Levels

The following noise insulation features shall be incorporated into the proposed project to reduce interior noise levels to 45 dBA L_{dn} or less:

- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for units on the project site, so that windows can be kept closed at the occupant's discretion to control interior noise and achieve the interior noise standards.

- Preliminary calculations indicate that the rooms located along the northern and southern façades of Building A within 150 feet of the centerline of St. Helena Highway would require windows and doors with a minimum Sound Transmission Class (STC)[2] rating of 30, assuming an exterior wall assembly of at least STC 46, with adequate forced-air mechanical ventilation to meet the interior noise threshold of 45 dBA L_{dn}. Figure 9 demonstrates the recommended STC ratings for the proposed project buildings. The remaining exterior-facing rooms along these façades of Building A would require windows and doors with a minimum STC rating of 26, assuming a wall assembly of STC 46, with adequate forced-air mechanical ventilation to meet the standard. All rooms located on the interior of the building, facing the pool area, would meet the 45 dBA L_{dn} criteria with standard construction materials and adequate forced-air mechanical ventilation.

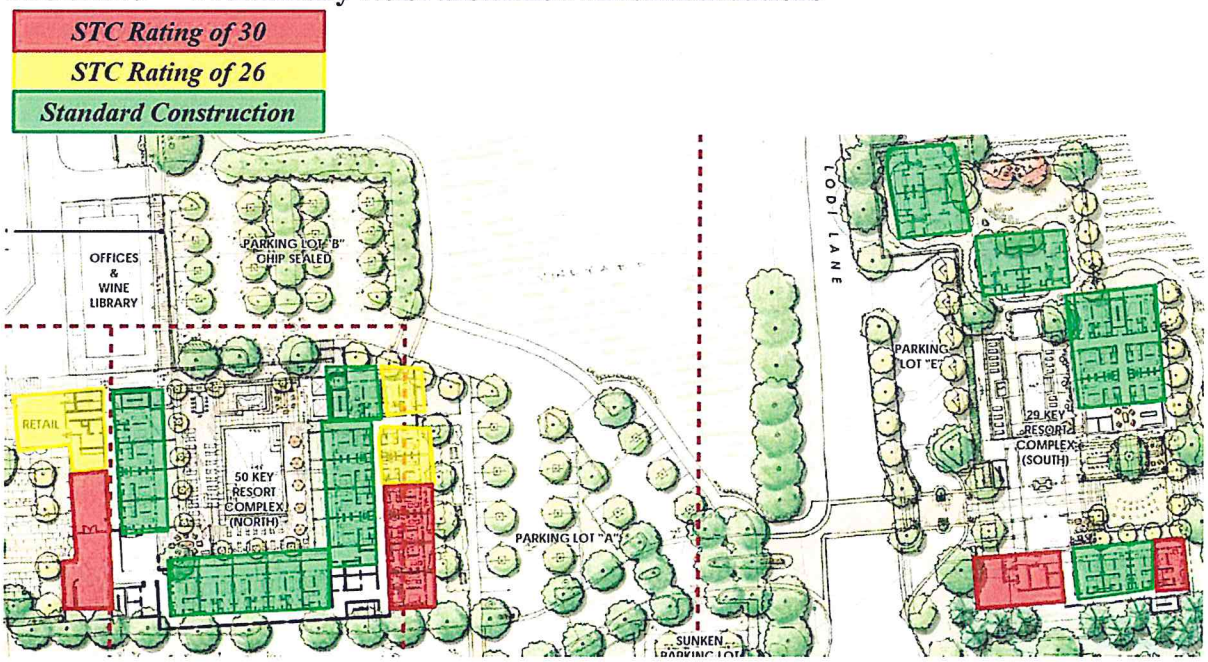
[2] **Sound Transmission Class (STC)** A single figure rating designed to give an estimate of the sound insulation properties of a partition. Numerically, STC represents the number of decibels of speech sound reduction from one side of the partition to the other. The STC is intended for use when speech and office noise constitute the principal noise problem.

- The corner units in the building on the south parcel adjacent to St. Helena Highway would require windows and doors with a minimum STC rating of 30, assuming an exterior wall assembly of at least STC 46, with adequate forced-air mechanical ventilation to meet the interior noise threshold of 45 dBA L_{dn}. The remaining units in this building would meet the interior noise threshold with standard construction materials and adequate forced-air mechanical ventilation. See Figure 9.

- The units in the building adjacent to Lodi Lane along the eastern boundary of the site would require meet the County's interior noise threshold of 45 dBA L_{dn} with standard construction and adequate forced-air mechanical ventilation. Standard construction materials would be adequate for the remaining buildings on the south parcel.

The implementation of these noise insulation features would reduce interior noise levels to 45 dBA L_{dn} or less.

FIGURE 9 Preliminary Noise Insulation Recommendations



Aircraft Noise

Angwin Airport is a public use airport located approximately 4.7 miles northeast of the project site. The project site is located outside the sphere of influence for this airport. Noise from aircraft does not substantially increase ambient noise levels at the project site, and interior noise levels resulting from intermittent aircraft overflights would be compatible with the proposed project.

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

Paraphrasing from Appendix G of the CEQA Guidelines, a project would normally result in significant noise impacts if noise levels generated by the project conflict with adopted environmental standards or plans, if the project would generate excessive groundborne vibration levels, or if ambient noise levels at sensitive receivers would be substantially increased over a permanent, temporary, or periodic basis. The following criteria were used to evaluate the significance of environmental noise resulting from the project:

- A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code.

- A significant impact would be identified if the construction of the project would expose persons to excessive vibration levels. Groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in cosmetic damage to normal buildings.

- A significant impact would be identified if traffic generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) the noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater.

- A significant noise impact would be identified if construction-related noise would temporarily increase ambient noise levels at sensitive receptors. Hourly average noise levels exceeding 60 dBA L_{eq}, and the ambient by at least 5 dBA L_{eq}, for a period of more than one year would constitute a significant temporary noise increase at adjacent residential land uses.

Impact 1: **Noise Levels in Excess of Standards.** The proposed project could potentially generate noise levels in excess of the standards established in the County's General Plan or Municipal Code at nearby sensitive receptors. **This is a potentially significant impact.**

This impact analyzes the significance of noise generated on the project site upon the existing noise-sensitive receptors surrounding the site. Project-generated noise sources would include mechanical equipment such as heating and air conditioning systems, outdoor activities occurring at the rooftop terrace and south lawn, parking lots, truck deliveries, and construction. Each of these noise-generating sources are analyzed in this impact. The significance of each noise source is determined by calculating the expected noise levels generated on the site at the nearby receptors, which are identified in Figure 1, and comparing those expected noise levels to the thresholds established by the County in the General Plan and Municipal Code.

Maximum exterior noise limits shown in Table 8.16.070 of the County's Municipal Code provides L_{50} (levels not to be exceeded more than 30 minutes in any hour) noise level limits for various land uses during daytime and nighttime hours. Table 2 summarizes the noise thresholds applied at each of the existing receptors surrounding the site for typical operational noise sources generated at the project site, which includes the stationary equipment noise sources. The existing land uses surrounding the project site include rural residences, a hotel, and a winery. Figure 1 identifies each of the surrounding land uses.

TABLE 2 County Exterior Noise Ordinance Standards

Hourly Noise Metric	Rural Residences and Hotels		Wineries	
	Daytime Level	Nighttime Level	Daytime Level	Nighttime Level
L_{50} (30 Min.)	50 dBA	45 dBA	75 dBA	75 dBA
L_{25} (15 Min.)	55 dBA	50 dBA	80 dBA	80 dBA
L_{08} (5 Min.)	60 dBA	55 dBA	85 dBA	85 dBA
L_{02} (1 Min.)	65 dBA	60 dBA	90 dBA	90 dBA
L_{max}	70 dBA	65 dBA	95 dBA	95 dBA

As stated in Section 8.16.070 of the Municipal Code, if the measured ambient noise levels are higher than the noise thresholds summarized in the first four categories in Table 2 (L_{50}, L_{25}, L_{08}, L_{02}), the allowable noise exposure standard shall be the ambient noise level.

Additionally, Table 8.16.060 of the County's Municipal Code summarizes the maximum permissible interior noise levels at all residential land uses for noise sources generated outside the dwelling. For noise sources operating for more than 5 minutes in any hour, the daytime interior noise threshold would be 60 dBA, and the nighttime interior noise threshold would be 55 dBA. For noise sources lasting more than 1 minute in any hour, the interior noise thresholds would be 65 dBA during daytime hours and 60 dBA during nighttime hours. The maximum instantaneous interior noise threshold would be 70 dBA L_{max} during daytime hours and 65 dBA L_{max} during nighttime hours.

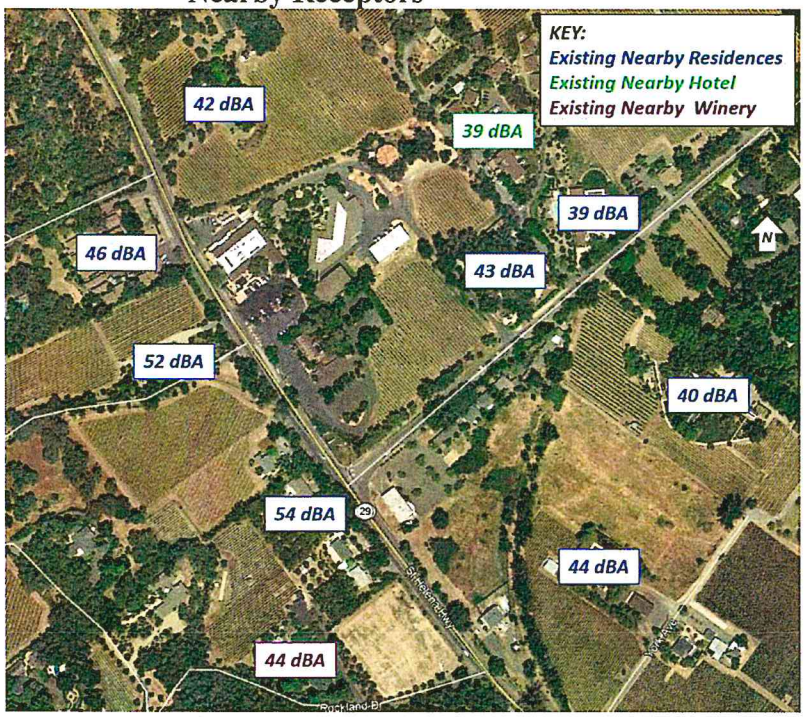
Mechanical Equipment Noise

The proposed project would include mechanical equipment, such as heating and air conditioning systems. Specific information regarding the number, type, size, and location on the property of the mechanical equipment to be used in the proposed project was not available at the time of this study. The placement of such equipment is typically on rooftops and/or surrounding the proposed buildings on the ground level.

Typical air conditioning units and heat pumps for hotels produce noise levels of about 60 dBA at a distance of 50 feet. Since this type of equipment would run continuously during the daytime and nighttime, the L_{50} category shown in Table 2 would be the most appropriate regulatory threshold to ensure a conservative analysis. Assuming worst-case conditions, the mechanical equipment for each of the future buildings would be located on the ground level along the building façades facing the nearby land uses. Noise levels from stationary noise sources such as mechanical equipment attenuate at a rate of 6 dBA per doubling of the distance between the source and receptor.

Worst-case mechanical equipment noise was calculated at the property lines of each existing noise-sensitive receptor surrounding the project site, which were identified in Figure 1. Figure 10 shows the worst-case calculated noise levels generated by mechanical equipment at the project site, as expected at the property lines of the nearby receptors. The predicted levels in Figure 10 are unmitigated and do not account for potential shielding effects of intervening buildings.

FIGURE 10 Predicted Mechanical Equipment Noise Levels at the Property Lines of the Nearby Receptors



Predicted noise levels attributable to project-related mechanical equipment would be less than 45 dBA L_{50} at all residences to the east of St. Helena Highway and the winery to the west of the highway. Noise levels at these receptors would meet the daytime thresholds of 50 dBA L_{50} and the nighttime thresholds of 45 dBA L_{50}.

The residences located west of St. Helena Highway would be exposed to unmitigated mechanical equipment noise levels exceeding 45 dBA. However, these receptors currently experience ambient noise levels ranging from 52 to 75 dBA L_{50} (average of 70 dBA L_{50}) during daytime hours and from 30 to 50 dBA L_{50} (average of 46 dBA L_{50}) during nighttime hours. The Municipal Code states that if ambient noise levels exceed the exterior noise limits summarized in Table 2, then the allowable noise exposure standard becomes the ambient noise level. The predicted mechanical equipment noise levels at the residences located west of St. Helena Highway would be below the average daytime ambient noise level of 70 dBA L_{50}; however, the predicted noise levels would potentially exceed the average nighttime noise level of 46 dBA L_{50} at the residences nearest to the project site.

Since the residences to the west of the St. Helena Highway could be exposed to mechanical equipment noise levels exceeding the average nighttime ambient noise level under project conditions, this would be a potentially significant impact.

Outdoor Activity Area Noise

Of the proposed outdoor use areas identified in Figure 8, the pool areas (1 and 5) and the outdoor lounge areas (3 and 4) would be relaxation areas for guests that are not expected to generate noise levels that would be audible at the surrounding land uses. However, the rooftop terrace (2) and the south lawn (6) would potentially be sources of noise audible at the surrounding land uses. Outdoor amplified music and speech are not expected at these locations. However, indoor amplified sound may occur at the indoor dining area attached to the rooftop terrace. The noise levels produced by typical noise sources at outdoor use areas proposed by the project, such as the rooftop terrace and south lawn, are summarized in Table 3, as measured at a distance of 50 feet.

TABLE 3 Typical Noise Source Levels at Outdoor Activity Areas (A-Weighted L_{50} Levels)

Activity	Typical Noise Level, at 50 feet
Non-Amplified (acoustic) Music	67 dBA
Films – Voices/Music	64 dBA
Raised Conversation	65 dBA

[a] Outdoor amplified music and speech are not proposed at the outdoor use areas.
[b] Indoor amplified music is expected at the dining area attached to the rooftop terrace.

Section 8.16.070(B) of the County's Municipal Code establishes a 5 dBA penalty for offensive noise, as judged by the noise control officer, that contain a steady, audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech. Outdoor activity area noise would consist of sounds primarily related to music and speech, therefore, the thresholds summarized in Table 2 would be reduced by 5 dBA, but not lower than 45 dBA, for noise levels generated at each of the outdoor uses areas.

Rooftop Terrace

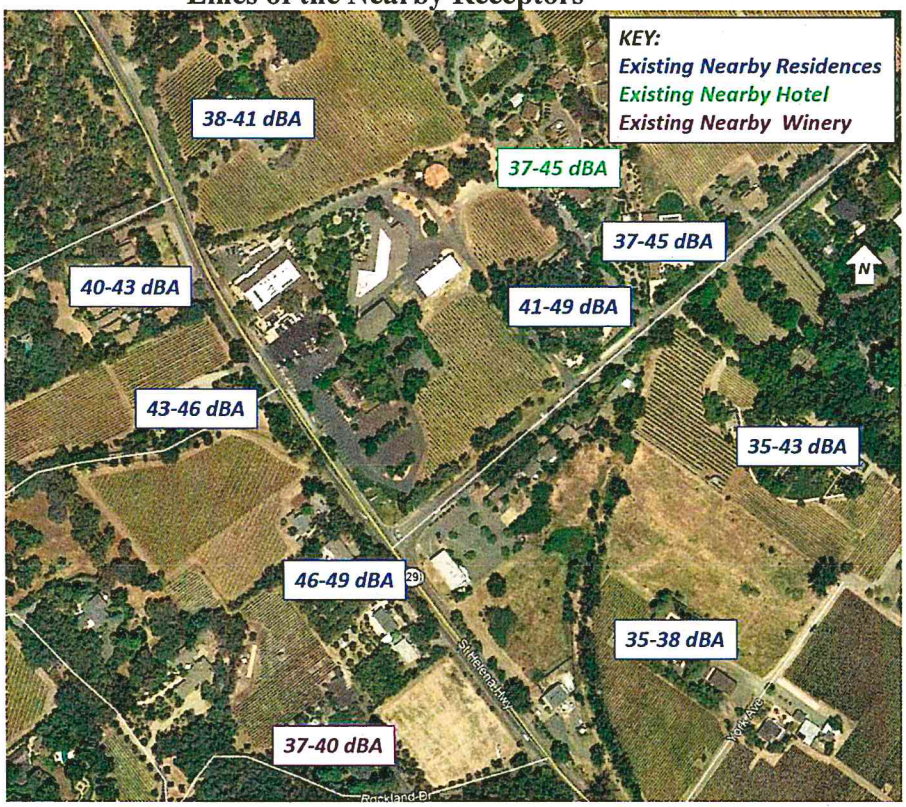
The rooftop terrace would include approximately 2,000 square feet of interior lounge space and 4,300 square feet of exterior terrace space. The maximum occupancy for the entire terrace area would be 150 people. As mentioned above, exterior amplified music and speech are not proposed at the rooftop terrace; however, indoor amplified music is expected within the indoor dining area attached to the rooftop terrace. Due to the localization of the noise source, rooftop terrace noise would attenuate at a rate of 6 dBA per doubling of the distance, between the noise source and the receptor. Assuming open doors and windows at the rooftop terrace, a conservative noise reduction of 12 dBA is used in the calculation for predicting the amplified music and speech noise levels at nearby sensitive receptors.

The rooftop terrace would open at 7:00 a.m. and close at 10:00 p.m. Therefore, noise generated at the rooftop terrace would be required to meet the daytime standard of 45 dBA L_{50}, which includes

the 5 dBA penalty, at the nearby residences and hotel, unless the ambient noise levels exceed the threshold. In that case, the noise generated at the rooftop terrace would need to be maintained at or below ambient noise levels reduced by 5 dBA.

Taking into account the elevation of the rooftop terrace above the ground and intervening buildings, both existing and proposed, Figure 11 shows the range of predicted noise levels at the surrounding receptors for noise due to rooftop terrace activities.

FIGURE 11 Predicted Noise Levels due to Rooftop Terrace Activities at the Property Lines of the Nearby Receptors



With an average daytime ambient noise level of 70 dBA L_{50}, noise levels generated at the rooftop terrace would be required to be at or below 65 dBA L_{50} at Residences 1, 2, and 3 located to the west of the project site. As shown in Figure 11, the predicted noise levels generated at the rooftop terrace would be below 65 dBA L_{50}.

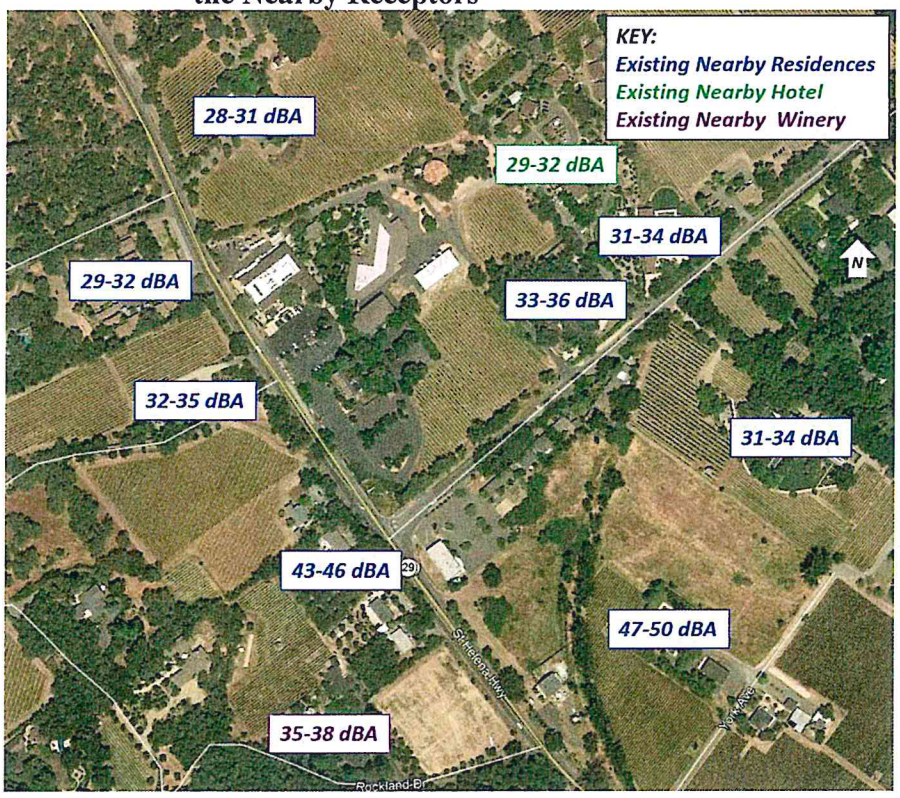
Predicted noise levels generated at the rooftop terrace would exceed the County's 45 dBA L_{50} threshold at Residence 5 east of the site. This residence would have direct line-of-sight to the rooftop terrace, with predicted noise levels exceeding the 45 dBA L_{50} standard by up to 4 dBA. Unmitigated noise from outdoor activities at this location would result in potentially significant impact.

South Lawn

The lawn area located on the south parcel is approximately 1,300 square feet and would have a maximum capacity of 86 people. Amplified music and speech would not occur at this location, and hours of operation would be from 11:00 a.m. to 10:00 p.m. Therefore, noise generated at the south lawn would be required to meet the penalized daytime standard of 45 dBA L_{50} at the nearby residences and hotel, unless the ambient noise levels exceed the threshold. In that case, the noise generated at the south lawn would need to be maintained at or below ambient noise levels reduced by 5 dBA.

The south lawn would be located on the ground-level, between Building B (to the west) and Building C (to the east). These surrounding buildings would provide at least partial shielding for the nearby receptors to the east, to the west, and to the north; however, the nearest receptor to the south would have direct exposure to the outdoor use area. Predicted noise levels, due to non-amplified music, films, and raised conversation that could be generated at the south lawn were calculated at the property lines of each nearby receptor identified in Figure 1. The range of predicted noise levels at each receptor are shown in Figure 12.

FIGURE 12 Predicted Noise Levels due to South Lawn Activities at the Property Lines of the Nearby Receptors



Residence 1 currently experience an average daytime ambient noise level of 70 dBA L_{50}; therefore, noise levels generated at the south lawn would be required to be at or below 65 dBA L_{50} at Residence 1. As shown in Figure 11, the predicted noise levels generated at the south lawn would be below 65 dBA L_{50}.

Predicted noise levels generated at the south lawn for the three types of activities shown in Table 3 (non-amplified music, films, and raised conversations) would exceed the County's 45 dBA L_{50} threshold at Residence 8 south of the site. With direct line-of-sight to the outdoor use area, the predicted noise levels would exceed the threshold by up to 5 dBA. Unmitigated outdoor activities at this location would result in a potentially significant impact.

Parking Lot Noise

Currently, there are 250 surface parking stalls included on the project site. With the incorporation of the proposed project, the total number of parking stalls would reduce to 198, with a significant portion of the existing parking located on the south parcel moving to an underground parking structure. Therefore, parking lot noise would not increase under future conditions. In fact, most of the existing noise due to parking lot traffic would likely be reduced under future project conditions because of the reduced number of parking stalls. This would be a less-than-significant impact.

Truck Loading and Unloading

The proposed project would include a small retail component on the north parcel in the main building, and a hotel component would be located on both the north and south parcels. Currently, winery and restaurant operations associated with the existing land use require truck deliveries. Typically, small retail and hotel land uses would require relatively few truck deliveries as part of regular operations (i.e., one or two truck trips weekly). Compared to the number of existing truck deliveries from the existing winery and restaurant operations, the additional delivery activities associated with the proposed project would be minimal and would not result in a measurable increase to the existing ambient noise environment. This would be a less-than-significant impact.

Construction Noise

While the Municipal Code does not specify allowable construction hours, it is assumed that construction activities for the proposed project would occur between the hours of 7:00 a.m. and 7:00 p.m. Table 8.16.080 of the County's Municipal Code includes noise thresholds for construction activities. At residential land uses, including single-family residences and hotels, noise levels shall not exceed 75 dBA between the hours of 7:00 a.m. and 7:00 p.m. At nearby wineries, noise levels shall not exceed 85 dBA between the hours of 7:00 a.m. and 7:00 p.m.

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The typical range of maximum noise levels anticipated for the proposed project would be 80 to 90 dBA L_{max} at a distance of 50 feet from the noise source. Impact pile driving would typically generate noise levels up to 105 dBA L_{max} at 50 feet, and vibratory pile driving would generate levels up to 95 dBA L_{max}. A list of typical maximum instantaneous noise levels measured at 50 feet are provided in Table 4.

Construction phases and equipment usage for the proposed project were not available at the time of this study; however, phases expected during construction include demolition of existing buildings, excavation, grading, exterior building erection, architectural coating, and paving.

Typical hourly average construction-generated noise levels for hotels range from about 78 to 89 dBA L_{eq} measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.), as shown in Table 5. These hourly average noise levels do not include pile driving activities. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

The hourly average noise levels from Table 5 that are typical for hotel construction were estimated at the nearest surrounding noise-sensitive receptors identified in Figure 1. Since proximity of the construction site to the individual receptors varies for each parcel, construction noise levels were calculated from the center of each parcel to the outdoor activity area for each nearby receptor. Table 6 summarizes the results for construction activity occurring on the north parcel, and Table 7 summarizes the results for construction on the south parcel.

Typically, pile driving activities for structures similar to the proposed project occur for durations ranging from one week to several weeks. During this time, hourly average noise levels would be higher than average noise levels. For the proposed project, pile driving activities would occur at the main building on the north parcel. Therefore, the nearest receptor would be located 100 feet from pile driving activities. Noise levels at this distance could reach up to 99 dBA L_{max} during impact pile driving and up to 89 dBA L_{max} during vibratory pile driving. This would exceed the County's daytime thresholds.

During the periods when pile driving would not occur, the predicted noise levels summarized in Tables 6 and 7 indicate that construction activities would not exceed the City's daytime noise threshold of 85 dBA.

While on-site winery buildings and commercial uses would be in close proximity to active construction activities with excessive noise levels, these on-site receptors would not be considered noise-sensitive since they are owned and operated by the same company as the hotel.

Reasonable regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life. Assuming the proposed project construction limits the hours of operation to between 7:00 a.m. and 7:00 p.m., construction noise levels are expected to meet the County's construction noise thresholds at the nearby sensitive receptors. Additionally, the construction crew shall adhere to the following construction best management practices as conditions of approval to reduce construction noise levels emanating from the site and minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity.

Construction Best Management Practices

Develop a construction noise control plan, including, but not limited to, the following available controls:

- Construct temporary noise barriers, where feasible, to screen stationary noise-generating equipment. Temporary noise barrier fences would provide a 5 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receptor and if the barrier is constructed in a manner that eliminates any cracks or gaps.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

- A temporary noise control blanket barrier could be erected, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.

- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.

- Route construction-related traffic along major roadways and as far as feasible from sensitive receptors.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- Evaluate alternatives to driven piles for the foundation, such as drilled piers (caissons) with mat slabs over top or rammed aggregate piers. Where pile driving is necessary, use vibratory pile driving as opposed to impact pile driving to reduce the disturbance to the surrounding noise-sensitive receptors.

- During pile driving, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.

- During pile driving activities, install "acoustical blankets" to provide shielding for receptors located within 100 feet of the site, or use of a noise-attenuating shroud on the pile driving hammer.

- The contractor shall prepare a detailed construction schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

The implementation of the reasonable and feasible controls outlined above would reduce construction noise levels emanating from the site in order to minimize disruption and annoyance. With the implementation of these controls, as well as limiting the hours of construction to daytime hours between 7:00 a.m. and 7:00 p.m., and considering that construction is temporary, the impact would be less-than-significant.

TABLE 4 Construction Equipment, 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: [1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3]Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

TABLE 5 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 6 Estimated North Parcel Construction Noise Levels at Nearby Sensitive Receptors[a]

Phase	Estimated Hourly Average Noise Levels, dBA L_{eq}[b]					
	West Residences – Receptors 1 to 3 (250 to 385ft)	**North Residence – Receptor 4 (550ft)**	**East Residences – Receptors 5 to 7 (450 to 885ft)**	**South Residence – Receptor 8 (890ft)**	**East Hotel – Receptor 9 (630ft)**	**West Winery – Receptor 10 (675ft)**
Ground Clearing	66-70 dBA L_{eq}	63 dBA L_{eq}	59-65 dBA L_{eq}	59 dBA L_{eq}	62 dBA L_{eq}	61 dBA L_{eq}
Excavation	61-75 dBA L_{eq}	58-68 dBA L_{eq}	54-70 dBA L_{eq}	54-64 dBA L_{eq}	57-67 dBA L_{eq}	56-66 dBA L_{eq}
Foundations	60-64 dBA L_{eq}	57 dBA L_{eq}	53-59 dBA L_{eq}	53 dBA L_{eq}	56 dBA L_{eq}	55 dBA L_{eq}
Erection	57-73 dBA L_{eq}	54-66 dBA L_{eq}	50-68 dBA L_{eq}	50-62 dBA L_{eq}	53-65 dBA L_{eq}	52-64 dBA L_{eq}
Finishing	57-75 dBA L_{eq}	54-68 dBA L_{eq}	50-70 dBA L_{eq}	50-64 dBA L_{eq}	53-67 dBA L_{eq}	52-66 dBA L_{eq}

[a] The estimated levels do not include pile driving activities.
[b] Range of noise levels indicates the noise levels calculated for the minimum required equipment present at site to all pertinent equipment present at site.

TABLE 7 Estimated South Parcel Construction Noise Levels at Nearby Sensitive Receptors[a]

Phase	Estimated Hourly Average Noise Levels, dBA L_{eq}[b]					
	West Residences – Receptors 1 to 3 (240 to 850ft)	**North Residence – Receptor 4 (1,030ft)**	**East Residences – Receptors 5 to 7 (480 to 680ft)**	**South Residence – Receptor 8 (425ft)**	**East Hotel – Receptor 9 (780ft)**	**West Winery – Receptor 10 (450ft)**
Ground Clearing	59-70 dBA L_{eq}	58 dBA L_{eq}	61-64 dBA L_{eq}	65 dBA L_{eq}	60 dBA L_{eq}	65 dBA L_{eq}
Excavation	54-75 dBA L_{eq}	53-63 dBA L_{eq}	56-69 dBA L_{eq}	60-70 dBA L_{eq}	55-65 dBA L_{eq}	60-70 dBA L_{eq}
Foundations	53-64 dBA L_{eq}	52 dBA L_{eq}	55-58 dBA L_{eq}	59 dBA L_{eq}	54 dBA L_{eq}	59 dBA L_{eq}
Erection	50-73 dBA L_{eq}	49-61 dBA L_{eq}	52-67 dBA L_{eq}	56-68 dBA L_{eq}	51-63 dBA L_{eq}	56-68 dBA L_{eq}
Finishing	50-75 dBA L_{eq}	49-63 dBA L_{eq}	52-69 dBA L_{eq}	56-70 dBA L_{eq}	51-65 dBA L_{eq}	56-70 dBA L_{eq}

[a] The estimated levels do not include pile driving activities.
[b] Range of noise levels indicates the noise levels calculated for the minimum required equipment present at site to all pertinent equipment present at site.

Mitigation Measure 1:

Mechanical Equipment Noise

Mechanical equipment shall be selected and designed to reduce impacts on surrounding uses to meet the County's noise level requirements. A qualified acoustical consultant shall be retained to review mechanical noise as these systems are selected to determine specific noise reduction measures necessary to reduce noise to be at or below ambient noise level conditions. Noise reduction measures could include, but are not limited to, selection of equipment that emits low noise levels and/installation of noise barriers such as enclosures and parapet walls to block the line-of-sight between the noise source and the nearest receptors. Alternate measures may include locating equipment in less noise-sensitive areas, such as the rooftop of the hotel buildings away from the building's edge nearest the single-family residences or in locations around the building façades facing away from the nearby receptors.

Outdoor Activity Area Noise

Rooftop Terrace

In addition to restricting amplified music and speech to the indoors, mitigation methods available to reduce noise levels generated at rooftop terrace would be limited to the construction of noise barrier around the perimeter of the outdoor use area. The proposed barrier would be continuous from grade to top, with no cracks or gaps, and have a minimum surface density of three lbs/ft^2 (e.g., one-inch thick marine-grade plywood, ½-inch laminated glass, concrete masonry units (CMU)). A barrier height of 5 feet, as measured from the pad elevation of the rooftop terrace, would be sufficient for breaking the line-of-sight and reduce noise levels at the nearby residence to below 45 dBA L_{50}.

It is assumed that a 3-foot edge barrier would be constructed around the perimeter of the rooftop terrace. Extending the height of this barrier to 5 feet or by constructing a clear 2-foot tall glass or plexiglass barrier on top of the 3-foot edge barrier would reduce noise levels generated at the rooftop terrace by 5 dBA, satisfying the 45 dBA L_{50} daytime threshold. Figure 13 shows the proposed location of the barrier.

South Lawn

To break the line-of-sight from the south lawn to Residence 8 located to the south of the site, a 5-foot sound wall or specially-designed barrier fence constructed along the southern boundary of the lawn and connect on each end to the proposed buildings, as shown in Figure 14. This proposed barrier would also be continuous from grade to top, with no cracks or gaps, and have a minimum surface density of three lbs/ft^2 (e.g., one-inch thick marine-grade plywood, ½-inch laminated glass, concrete masonry units (CMU)). The height of the barrier would be measured from the pad elevation of the south lawn.

With the inclusion of this barrier, noise levels generated at the south lawn would be at or below 45 dBA L_{50} at Residence 8.

Final design for both barriers shall be confirmed during the final design phase of the proposed project.

FIGURE 13 Proposed Barrier at the Rooftop Terrace

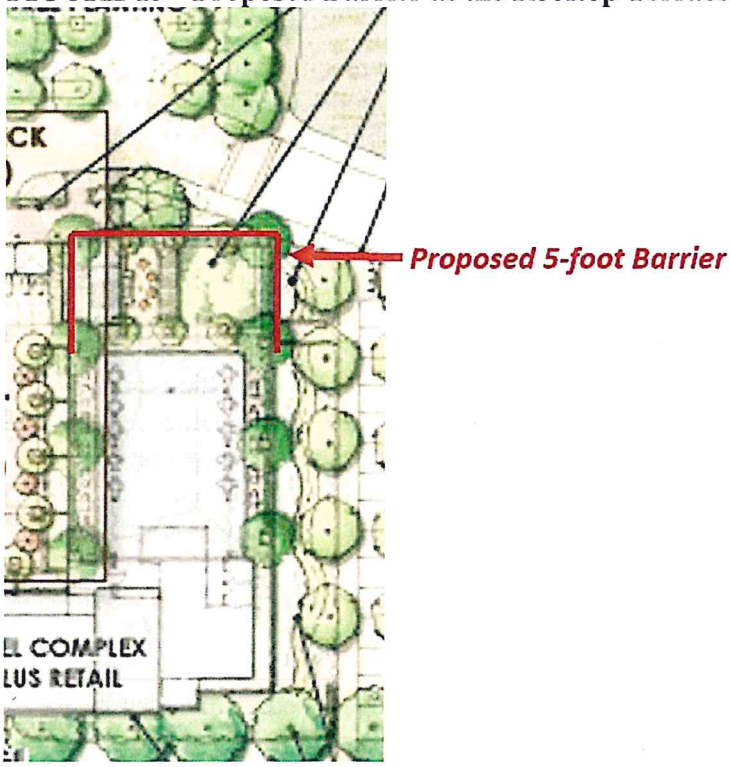
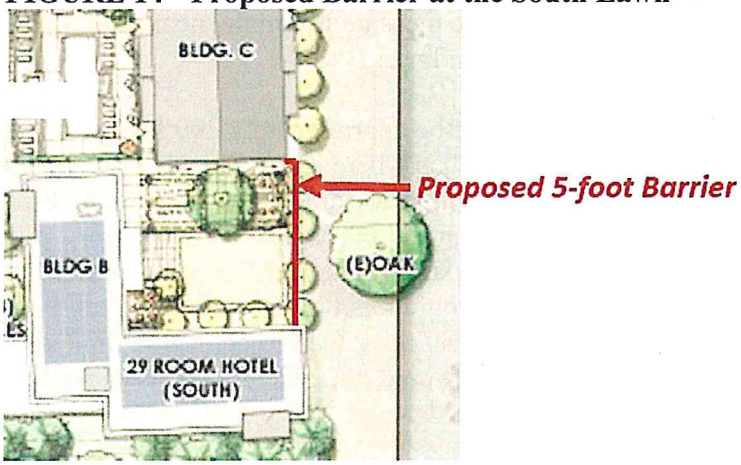


FIGURE 14 Proposed Barrier at the South Lawn



Impact 2: **Exposure to Excessive Groundborne Vibration due to Construction.** Construction-related vibration levels resulting from activities at the project site would not exceed 0.3 in/sec PPV at the nearest sensitive land uses. **This is a less-than-significant impact.**

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities would include site preparation work, foundation work, and new building framing and finishing. Pile driving which can cause excessive vibration, is expected for the proposed project.

For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened. No ancient buildings or buildings that are documented to be structurally weakened adjoin the project site. Therefore, groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a significant vibration impact.

Table 8 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project construction activities, such as pile driving, drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.), may generate substantial vibration in the immediate vicinity. Impact pile driving could generate vibration levels up to 1.158 in/sec PPV at a distance of 25 feet, while vibratory pile driving would generate levels up to 0.734 in/sec PPV at the same distance. Jackhammers typically generate vibration levels of 0.035 in/sec PPV, and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

For the analysis of the construction vibration levels, impacts are evaluated at the nearest noise-sensitive structures surrounding the project site, instead of the property lines of the receiving receptors. For pile driving activities, the distances are calculated from the main building façade on the north parcel (where pile driving is expected to occur) to the structures on the surrounding land uses. For all remaining construction activities, distances were measured from the nearest property line of the project site to the structures on the surrounding land uses.

The nearest existing structures west of the project site would be approximately 200 feet from the nearest façade of the main building on the north parcel, which is where pile driving is expected to occur. At this distance, vibration levels due to pile driving activities would reach levels up to 0.11 in/sec PPV, assuming impact pile driving, and up to 0.07 in/sec PPV, assuming vibratory pile driving. All other existing structures surrounding the project site would be 380 feet or more from pile driving activities. At these distances, vibration levels would be at or below 0.06 in/sec PPV during either impact or vibratory events. Therefore, if pile driving at the project site is limited to the main building on the north parcel, pile driving activities would not generate levels exceeding 0.3 in/sec PPV at the surrounding sensitive receptors.

For all other construction activities, which could occur along the property lines of the construction site, the nearest existing structure would be approximately 120 feet to the west of the project site, opposite St. Helena Highway. At this distance, vibration levels would be up to 0.04 in/sec PPV. All other existing structures surrounding the site would be 250 feet or more from the boundaries of the project site. At these distances, vibration levels would be at or below 0.02 in/sec PPV during construction activities not including pile driving.

Vibration levels expected at nearest off-site noise-sensitive receptors would be below the 0.3 in/sec PPV significance threshold during all construction activities, including pile driving. This is a less-than-significant impact.

TABLE 8 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Approximate L_v at 25 ft. (VdB)
Pile Driver (Impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

Mitigation Measure 2: None required.

Impact 3: Permanent Noise Level Increase. The proposed project would not result in a substantial permanent noise level increase due to project-generated traffic at the existing noise-sensitive land uses in the project vicinity. **This is a less-than-significant impact.**

Typically, a significant permanent noise increase would occur if the project would increase noise levels at noise-sensitive receptors by 3 dBA L_{dn} or greater where future ambient noise levels exceed 60 dBA L_{dn}. Where future ambient noise levels are at or below 60 dBA L_{dn}, a noise level increase of 5 dBA L_{dn} or greater would be considered significant. For the existing single-family residences and the mobile home park located along St. Helena Highway, existing ambient levels exceed 60 dBA L_{dn}; therefore, future ambient levels would exceed 60 dBA L_{dn}. Traffic noise increases of 3 dBA L_{dn} or more along St. Helena Highway would result in a significant impact. For the residences and hotel located along Lodi Lane, the future noise environment is expected to be less than 60 dBA L_{dn}; so, a noise level increase of 5 dBA L_{dn} or more would be considered a significant impact. For reference, a 3 dBA L_{dn} noise increase would be expected if the project would double existing traffic volumes along a roadway, and a 5 dBA L_{dn} increase would be expected if the project would triple existing traffic volumes.

The traffic report provided by *W-Trans*[1] provided peak hour weekday and weekend volumes for the project-generated traffic at the St. Helena Highway/Lodi Lane and Silverado Trail/Lodi Lane intersections. The project increases were added to the existing volumes to generate existing plus

project peak hour volumes. Comparing the existing plus project peak hour volumes to the existing peak hour volumes, the proposed project would result in a less than 1 dBA L_{dn} noise level increase along St. Helena Highway and Silverado Trail, while a 1 dBA L_{dn} increase would occur along Lodi Lane due to project traffic on weekdays and weekends. Therefore, the proposed project would not cause a substantial permanent noise level increase at the nearby noise-sensitive receptors. This is a less-than-significant impact.

Mitigation Measure 3: **None required.**

Impact 4: **Cumulative Noise Increase.** The proposed project would not make a cumulatively considerable contribution to future noise levels at residential land uses in the vicinity. **This is a less-than-significant impact.**

A significant impact would occur if the future cumulative traffic noise level increase was 3 dBA L_{dn} or greater for future levels exceeding 60 dBA L_{dn} or was 5 dBA L_{dn} or greater for future levels at or below 60 dBA L_{dn} and if the project would make a "cumulatively considerable" contribution to the overall traffic noise increase. A "cumulatively considerable" contribution would be defined as an increase of 1 dBA L_{dn} or more attributable solely to the proposed project.

The project traffic volumes were added to the future peak hour traffic volumes to generate the future plus project peak hour scenario. By comparing both future and future plus project scenarios to the existing peak hour scenario, the noise level increases with and without project traffic were estimated. Traffic noise level increases estimated for the future scenario (no project) were 1 dBA L_{dn} along St. Helena Highway, 1 dBA L_{dn} along Lodi Lane, and 4 dBA L_{dn} along Silverado Trail. The same noise level increases along St. Helena Highway and Silverado Trail were calculated when comparing the future plus project scenario to the existing peak hour traffic volumes. While a 2 dBA L_{dn} increase was calculated along Lodi Lane during the peak hour on weekends, this would be a less-than-significant impact since the increase along Lodi Lane is less 5 dBA L_{dn} under both future scenarios.

Mitigation Measure 4: **None required.**

Impact 5: **Temporary Construction Noise.** Existing noise-sensitive land uses would be exposed to a temporary increase in ambient noise levels due to project construction activities. The incorporation of construction best management practices listed above in Mitigation Measure 1 as project conditions of approval would result in a **less-than-significant** temporary noise impact.

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

As discussed in Impact 1, construction noise would meet the requirements established in the Napa County Municipal Code with the implementation of the Construction Best Management Practices and limiting hours of construction to the daytime hours of 7:00 a.m. to 7:00 p.m. The discussion below evaluates the temporary noise impacts resulting from project construction activities when compared to ambient noise conditions and general thresholds based on indoor speech interference. As discussed in the Fundamentals section of this report, thresholds for speech interference indoors is 45 dBA. Assuming a 15 dBA exterior-to-interior reduction for standard residential construction and a 25 dBA exterior-to-interior reduction for standard commercial construction, this would correlate to an exterior threshold of 60 dBA L_{eq} at residential land uses and 70 dBA L_{eq} at commercial land uses. Additionally, temporary construction would be annoying to surrounding land uses if the ambient noise environment increased by at least 5 dBA L_{eq} for an extended period of time. Therefore, the temporary construction noise impact would be considered significant if project construction activities exceeded 60 dBA L_{eq} at nearby residences and hotels or exceeded 70 dBA L_{eq} at nearby wineries and exceeded the ambient noise environment by 5 dBA L_{eq} or more for a period longer than one year.

The nearest noise-sensitive receptors and the distances from these receptors to the center of the north and south parcel construction sites were provided in Tables 6 and 7, respectively, under Impact 1. For typical construction activities, Tables 6 and 7 also summarize the estimated hourly average noise levels for each expected phase of construction at the nearby receptors. For a limited time period, either impact and/or vibratory pile driving would also elevate ambient noise levels. Pile driving would produce noise levels that would reach 99 dBA L_{max} for impact pile driving events or 89 dBA L_{max} for vibratory pile driving events at the nearest sensitive receptor.

Construction noise levels are expected to exceed 60 dBA L_{eq} at the nearby residences and the nearest hotel throughout project construction. The nearby residences identified in Figure 1 as Receptors 1 through 3 are located within 100 feet of the centerline of St. Helena Highway, and these receptors would have existing ambient noise levels represented by measurements made at LT-2, which typically range from 68 to 76 dBA L_{eq} during daytime hours. As shown in Tables 6 and 7, construction noise levels at these residences would not exceed the ambient noise levels by 5 dBA L_{eq} or more. The remaining residences (identified as Receptors 4 through 8 in Figure 1) and the nearby hotel (Receptor 9 in Figure 1) would also be exposed to construction noise levels exceeding 60 dBA L_{eq} at times throughout construction. At these receptors, existing ambient noise levels are represented by measurements made at LT-1, which typically range from 46 to 58 dBA L_{eq} during daytime hours. As shown in Tables 6 and 7, noise due to the project construction would increase ambient noise levels at these receptors (Receptors 4 through 9) by more than 5 dBA L_{eq} at times throughout the duration of project construction.

While the duration for project construction and detailed phasing information was unavailable at the time of this study, the noise estimates summarized above in Tables 6 and 7 adequately demonstrate the construction noise to which the nearby land uses would be exposed. The temporary noise thresholds based on indoor speech interference would potentially be exceeded at the nearby receptors, and ambient noise environments would be exceeded at times by more than 5 dBA L_{eq}. Based on the size of the proposed project and the multiple buildings to be constructed on multiple parcels, it is assumed that this project would take over a year to complete.

With the implementation of the Construction Best Management Practices provided in **Impact 1** and the understanding that the proposed project construction would increase noise levels for a limited time duration, this impact would be less-than-significant.

Mitigation Measure 5: **No further mitigation required.**

APPENDIX

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness. Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table A1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table A2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (L_{dn} or *DNL*) is essentially the same as CNEL, with

the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60-70 dBA. Between a L_{dn} of 70-80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table A3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table A3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

TABLE A1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE A2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE A3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

Appendix L
Traffic Impact Study

August 23, 2024

Ms. Jill Feyk-Miney
Managing Environmental Planner
ESA
180 Grand Avenue, Suite 1050
Oakland, CA 94612

Draft Addendum No. 2 to the *Traffic Impact Study for the Inn at the Abbey*

Dear Ms. Feyk-Miney;

Potential transportation impacts associated with the proposed Inn at the Abbey project were analyzed in the *Traffic Impact Study for the Inn at the Abbey* (W-Trans, 2019). Since that time, the State of California requirements for analyzing transportation impacts under the California Environmental Quality Act (CEQA) shifted from an analysis based on Levels of Service (LOS) to one based on Vehicle Miles Traveled (VMT). The purpose of this addendum letter is to assess the project's potential transportation impact on VMT.

Project Description

The project description is unchanged from the one as evaluated in the 2019 TIS and includes the development of a 79-room hotel on the existing Freemark Abbey site located on the northeast corner of SR 29/Lodi Lane in the County of Napa. The site is currently occupied by a winery, tasting room, restaurant, café, and retail space and is permitted for additional uses, although not operational, consisting of a second restaurant, a motel, a retail wine shop, an art gallery, and commercial retail space. No changes are proposed to the existing uses; however, the applicant would forgo the non-operational entitled uses in lieu of the proposed hotel. A total of 50 hotel rooms would be located on the parcel north of Lodi Lane and 29 rooms would be located south of Lodi Lane. The site would continue to be accessed via the existing driveways on SR 29 and Lodi Lane, though the driveway to the southern parcel would be modified to include a one-way drive aisle with a designated drop-off area. Self-parking would be provided in surface lots and valet parking would occur in an underground parking garage.

Trip Generation

As indicated on page 18 of the 2019 TIS, the proposed project would be expected to result in 645 new trips on a daily basis, including 33 trips during the weekday p.m. peak hour and 57 trips during the weekend midday peak hour. The trip generation potential was estimated using standard rates for "Resort Hotel" (ITE LU #330) and "Hotel" (ITE LU # 310) contained in the *Trip Generation Manual*, 9th Edition, 2012, published by the Institute of Transportation Engineers (ITE), and is copied below in Table 1 for reference. It is noted that rates in the more recent 11th Edition of the *Trip Generation Manual* are slightly lower. While the project also includes retail space, it would be auxiliary to the hotel so the trips associated with this use would reasonably be reflected in the trip rates for the hotel as it is common for hotels to have auxiliary retail and restaurant uses.

Table 1 – Proposed Trip Generation Summary

Land Use	Units	Daily		Weekday PM Peak			Weekend MD Peak		
		Rate	Trips	Trips	In	Out	Trips	In	Out
Resort Hotel	79 rooms	-	-	33	14	19	-	-	-
Hotel	79 rooms	8.17	645	-	-	-	57	32	25
Total Proposed			**645**	**33**	**14**	**19**	**57**	**32**	**25**

Vehicle Miles Traveled (VMT)

The *Napa County Traffic Impact Study (TIS) Guidelines*, 2022, include a methodology for analyzing VMT for development projects based on total VMT as well as thresholds of significance for use in CEQA analyses. The guidelines specify the procedure for projects considered to be modifications to existing facilities, stating that "for the purposes of VMT analysis, the County will consider the baseline trip generation for all existing facilities to be the trip generation under entitled operating characteristics as of January 1, 2022. When an existing facility applies for a modification, the trip generation associated with that modification will be calculated as the change between the facility's entitled operations on January 1, 2022 and the expected operations once the proposed modification is complete."

Entitled Uses

As indicated on page 4 of the TIS, the site was previously permitted for additional uses beyond the existing winery, tasting room, restaurant, café, and retail space, although these additional uses are not operational. The total entitled uses are summarized in Table 2 by category – those which are existing and those which are entitled but not operational.

Table 2 – Summary of Entitled Uses

Condition Land Use	Description
Existing	
Winery/tasting room	Produces 60,000 gallons/year
Restaurant	6,500 square feet
Café	950 square feet
Retail Wine Space	985 square feet
Entitled (Not Operational)	
Motel	5 rooms
Restaurant	5,100 feet
Retail Wine Space	1,800 square feet
Art Gallery	1,700 square feet
Commercial Retail Space	3,500 square feet

The combined number of trips from the existing and entitled non-operational uses was calculated based on the application of two methodologies: 1) the County's Winery Traffic Information/Trip Generation Sheet for the winery and tasting room, and 2) ITE trip generation rates for the remaining uses. Uses for which the same land use and trip generation rates were applied were consolidated to simplify the trip generation table. The combined trip generation estimate for the entitled uses (both existing and not operational) is 1,586 trips per day, as shown in Table 3.

DRAFT

Table 3 – Trip Generation Summary for Entitled Uses

Land Use	Units	Daily		Weekday PM Peak			Weekend MD Peak		
		Rate	Trips	Trips	In	Out	Trips	In	Out
Winery & Tasting Room*	n/a	n/a	119	45	15	30	66	33	33
Quality Restaurant	11.600 ksf	89.95	1,043	87	58	29	126	74	52
Motel	5 rooms	5.63	28	2	1	1	3	2	1
Specialty Retail	8.935 ksf	44.32	396	24	11	13	45	25	20
Total Entitled			**1,586**	**158**	**85**	**73**	**240**	**134**	**106**

Note: * = Developed using the County of Napa Winery Traffic Information/Trip Generation Sheet; ksf = 1,000 square feet

Trip Generation Comparison

Since the proposed hotel would be in lieu of the already approved but non-operational uses, the impact of the land use change was evaluated by comparing the trip generation of the proposed hotel to the trip generation for the entitled non-operational uses. Applying ITE rates, the entitled non-operational uses were estimated to generate 797 trips per day. As shown in Table 4, the proposed hotel is expected to generate 152 fewer trips per day than the entitled non-operational uses.

Table 4 – Trip Generation of Proposed Uses vs. Entitled, Non-Operational Uses

Land Use	Units	Daily		Weekday PM Peak			Weekend MD Peak		
		Rate	Trips	Trips	In	Out	Trips	In	Out
Proposed Hotel	79 rooms	8.17	645	33	14	19	57	32	25
Entitled, Non-Operational Uses									
Quality Restaurant	5.1 ksf	89.95	459	55	32	23	38	26	12
Motel	5 rooms	5.63	28	2	1	1	3	2	1
Specialty Retail	7.0 ksf	44.32	310	35	20	15	19	8	11
Total Entitled, Non-Operational			*797*	*93*	*54*	*39*	*60*	*36*	*24*
Net Difference			**-152**	**-60**	**-40**	**-20**	**-3**	**-4**	**1**

Note: ksf = 1,000 square feet

Significance Finding – As stated in the County's TIS guidelines, the baseline for assessing VMT impacts is the trip generation of the entitled uses. Since the trips associated with the entitled, non-operational uses exceed the trips associated with the proposed uses, the project's VMT impact would be considered less than significant.

Greenhouse Gas (GHG) Emissions

While no transportation VMT impacts have been identified that require mitigation measures, it is understood that potential greenhouse gas (GHG) emissions impacts have been identified. Napa County has several policies related to GHG and vehicle trip reduction and an established trip reduction target. As a result, the project was evaluated for compliance with the County's trip reduction target.

Napa County Trip Reduction Requirements

Per the County's TIS Guidelines, the number of project trips must be reduced to a level that is 15 percent below the unmitigated trip generation using ITE rates to meet the trip reduction target. As noted previously, the proposed project is estimated to generate 645 new trips per day. To reach the threshold, the project would need to reduce its unmitigated trip generation by 97 trips per day to 548 or fewer daily trips. Therefore, strategies to

DRAFT

reduce project-generated trips below the threshold were evaluated, including adjustments for internally captured trips to reflect the existence of multiple land uses on-site, and identification of transportation demand management (TDM) measures.

Internal Capture

To provide a conservative assessment of the project's potential operational effects on the surrounding transportation network, the trip generation presented in the TIS did not account for internal trips. Standard ITE rates for hotels were developed based on data collected at sites that have amenities such as retail and restaurant facilities, hence the rates include trips for these ancillary uses which are not proposed as part of the project. In the case of the proposed Inn at the Abbey project, these ancillary retail and restaurant uses already exist and are generating trips, but use of unadjusted hotel trip generation rates does not accurately reflect the anticipated trip reductions due to interactions among these uses and the proposed hotel. Such internal trips would consist of visitors patronizing the existing on-site retail, tasting room, and restaurant uses as opposed to there being new amenities generating these trips. These trips would generally be made by walking so would not result in any new vehicle trips or VMT.

The *Trip Generation Manual* includes data and methodologies that can be applied to determine the proportion of internal trips that may occur within a development area that includes a variety of land uses, though there are limited land use categories for which internal capture rates are available, including hotels, restaurants, and retail. The retail land use category was therefore applied to the existing retail, café, and winery/tasting room uses, as these uses most closely fit that description. It is noted that internal capture rates are available only for the weekday a.m. and p.m. peak hours; however, per County requirements the winery/tasting room trip generation was estimated for the TIS using the Napa County trip generation worksheet, which estimates trips for the weekday p.m. peak and weekend midday peak hours. The internal capture trips for the hotel, restaurant, retail, and winery uses were calculated to be 22 percent of the weekday p.m. peak hour trips. Due to the nature of the existing and proposed uses, all of the internal capture trips would be expected to be associated with visitor travel.

Note that the hotel, restaurant and retail trip generation estimates used standard ITE rates, while the winery trip generation was derived from Napa County's trip generation form; in accordance with the generation form, it was estimated that 38 percent of the daily trips occur during the peak hour. Estimating conservatively, a 10 percent rate was applied to estimate the daily internal capture rate for the proposed hotel and existing uses on the site. This equates to a reduction of 65 trips per day.

Trip Reduction Strategies

A set of recommended trip reduction strategies have been developed to reduce project-generated trips by reducing single-occupancy vehicle trips, parking demand, and total vehicle miles traveled (VMT) through use of alternative modes of transportation and more efficiently planned trips. Measures were recommended based on what was determined to be feasible for the proposed uses given the context of the project. The estimated reduction in VMT associated with each measure is provided in the discussion below.

There are no formal trip reduction initiatives currently being implemented in association with existing winery/tasting room, restaurant, café, and wine retail uses. However, since the proposed hotel is located on the same site with these uses, the inclusion of existing employees as eligible participants in the proposed programs could be accomplished efficiently and would achieve trip/emission reductions for the site. Therefore, the estimated trip reductions for existing employees were included along with the trip reductions for the employees of the proposed hotel.

Employee Trip Reduction

Trip reduction strategies were primarily focused on reduction of employee trips, as there is substantial research that has documented the effectiveness of such strategies in a workplace context, as published in *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, 2021 (CAPCOA). There are 55 employees currently working at the Freemark Abbey site and, including the

estimated 48 employees that would work at the proposed hotel, there would be a total of 103 employees at the site. It is estimated that the average employee would generate 3.0 trips per day since some employees may leave the site during the day for a meal or for personal or work-related reasons. For the existing plus proposed employees, there would therefore be a total of 309 employee trips per day.

On-Site Employee Housing

To help reduce employee vehicle trips, the project includes six on-site residential units dedicated for use by employees. Employees living in these units would not be required to use vehicles to commute to work or to travel home for lunch. Therefore, having six employees living on-site would result in a reduction of 18 trips.

Transportation Demand Management (TDM)

It is recommended that the incentives described below be offered as part of an employee transportation demand management (TDM) program, which would be available for the first two years of operation. After that time, the effectiveness of the program should be reevaluated and modified, if needed. The recommended TDM program consists of the following:

- **Education, Outreach, and Marketing:** The presence of a staff person dedicated part-time to overseeing and managing the TDM program will be helpful in ensuring the ongoing success of these programs. This would not be a distinct position, but instead would be a role that is integrated into the duties of the on-site manager. The duties can include the following.

- Create and distribute employee transportation information welcome packets
- Maintain and update a bulletin board or other physical source of transportation information
- Distribute Napa Bicycle Coalition maps
- Monitor bicycle facilities
- Promote the ride-matching program
- Market special events such as the NVTA "V-Commute Challenge" program

- **Carpool Incentives:** Including existing and proposed uses, the project site would have up to 103 employees on-site across all uses at peak times so there is a substantial opportunity for employees to carpool to work, especially considering that the winery, tasting room, hotel, and restaurant would require numerous employees to work the same shift. Financial incentives can be an effective way to encourage employees to carpool to work. The applicant would provide an incentive of $50 per month to employees who agree to carpool to work a minimum of 75 percent of the time. In addition, the applicant would reserve five parking spaces immediately adjacent to the wine production building for use by carpool vehicles only. This program would be offered to the existing employees as well as new employees of the hotel.

- **Subsidized Transit Passes:** The project site is conveniently located next to two Vine Transit stops on SR 29 and is therefore accessible via transit. Employees wishing to use transit to reach the site would be provided with a monthly pass for Vine Transit free of charge.

- **Guaranteed Ride Home:** One of the reasons that many employees do not carpool to work is the fear of being stranded should they need to leave in an emergency. Employees who carpool to work should be guaranteed a ride home in case of an emergency or unique situation. As part of the V-Commute program offered by the Napa Valley Transportation Authority (NVTA), employees who carpool or commute via alternative modes are able to use a taxi, rental car, Lyft, Uber, or other means to get home in an emergency and are reimbursed for the full cost of the service. The program is available to all who work or attend college in Napa County and is free to join, but registration is required. As part of the project's TDM program, employees would be provided information about V-Commute and would be encouraged to register for the service.

DRAFT

- **Bicycle Trip-end Facilities:** The proposed project includes long-term covered bicycle storage for six bicycles and an additional 12 standard spaces to accommodate a total of 18 bicycles, which exceeds County requirements. Showers and changing rooms would be provided on-site to further encourage employees to ride their bicycles to and from work.

The CAPCOA report notes that when multiple trip reduction measures are applied, the reductions cannot necessarily be added, as there may be diminishing returns. To account for this, "multiplicative dampening" is applied to more accurately account for the trip reduction, which for the implementation of the above-described measures is 9.5 percent. After reducing the total of 309 estimated employee trips by 18 to account for the on-site employee housing, there are 291 remaining employee trips. Applying the 9.5 percent reduction, this equates to a reduction of 28 trips per day. The total estimated employee trip reduction calculations are summarized in Table 5.

Table 5 – Summary of Employee VMT Reduction

Trip Reduction Measures	**VMT Reduction (%)** **Project Estimate**
Education, Outreach, and Marketing	4.0
Ridesharing	4.0
Transit Subsidy	0.1
Bicycle Parking/Lockers/Showers	1.7
Total Potential VMT Reduction	9.8
Multiplicative Dampening Applied	**9.5**

Notes: TDM = transportation demand management; VMT = vehicle miles travelled

Visitor Trip Reduction

While the research regarding TDM measures for visitor trip reduction is less robust than for employees, some conservative assumptions can be applied to estimate the number of trips that could be reduced. The project will include the provision of bicycles for use by visitors. *Visit Napa Valley – 2018 Visitor Profile Study* found that wine tasting rooms at wineries are the most popular attraction for visitors to Napa County (named by 81 percent of survey respondents) and that they typically visit 3.7 wineries on average. The proposed hotel is located adjacent to the Freemark Abbey winery and is proximate to dozens more. While bicycling is already a popular activity in Napa County for touring bicyclists, the construction of the Napa Valley Vine Trail is expected to generate interest in bicycling for visitors interested in riding shorter distances who may be less comfortable riding with vehicle traffic. Construction of an 8.2-mile segment of the Vine Trail is currently nearing completion and will be accessible via a short walk from the project site; the project includes trail crossing enhancements across Lodi Lane at the intersection with SR 29. The trail will enable users to ride to within a half mile of the center of Calistoga and St. Helena. This is anticipated to be a popular option for hotel visitors, as it would enable them to avoid driving along SR 29, which is typically congested, particularly during peak visitor season. There are dozens of wineries with tasting rooms, restaurants, and other destinations located in close proximity to the trail.

To estimate the trip reduction from visitors' use of the on-site bicycles, it is noted that most visitors are couples who would typically be sharing a motor vehicle. As a result, it is reasonable to assume that the number of bicycle trips would be approximately twice the number of vehicle trips replaced. With 79 rooms at the hotel, it is reasonable to assume that at least 10 people per day would choose to bicycle in lieu of driving, or 20 person-trips per day (i.e. each visitor exiting and returning to the site would equal two trips). Assuming that all the visitors are couples that would otherwise drive together, this would result in a reduction of 10 trips per day. Once the St. Helena to Calistoga segment is open, 28.2 miles of the Vine Trail will be complete, and as the trail continues to develop it is expected to generate more demand for bicycle trips, which would further reduce trips. It is recommended that the project provide a minimum of 10 bicycles for use by visitors to allow for this level of usage; each bicycle could potentially be used multiple times per day.

DRAFT

Total Trip Reduction

There are an estimated 645 daily unmitigated trips associated with the project. Per County requirements, to have a less than significant GHG impact requires average daily trips to be reduced to a level 15 percent below standard trip generation rates, which requires a reduction of 97 trips per day. After accounting for reduced vehicle trips due to internal capture, on-site employee housing, employee TDM programs, and visitor trip reduction programs, it was found that project trips would be reduced by 121 trips per day, or 19 percent below unmitigated project conditions. With implementation of the recommended measures, the project would achieve the required 15 percent trip reduction. The total trip reduction achieved by the recommended measures is summarized in Table 6.

Table 6 – Total Trip Reduction

Measure	**Trips Reduced**
Internal Capture (10%)	65
On-Site Employee Housing	18
Employee TDM Program (9.5%)	28
Visitor TDM Program	10
Combined Trip Reduction	**121**
Required Trip Reduction to Achieve 15% Threshold	*97*

Project Consistency with Napa County GHG Policies

The project was evaluated to assess its consistency with the County's adopted GHG policies. The following policies from the Circulation Element of the Napa County General Plan are related to reduction of transportation-related GHG emissions:

- Policy CIR-7:

  All applicants for development projects or modifications thereto shall be required to evaluate the vehicle miles traveled (VMT) associated with their projects, in order to determine the projects' environmental impacts pursuant to the California Environmental Quality Act. Applicants shall specify feasible measures to reduce a proposed project's VMT and shall provide an estimate of the VMT reduction that would result from each measure. Upon the effective date of the pertinent State CEQA Guidelines, projects for which the specified VMT reduction measures would not reduce unmitigated VMT by 15 or more percent shall be considered to have a significant environmental impact.

- Policy CIR-8:

  In support of state and regional goals to reduce greenhouse gas emissions and encourage active transportation modes, the County will implement programs to reduce the number of VMT on local roadways and regional routes in the County. In addition to those Transportation Demand Management strategies to reduce single-occupant vehicle use listed in Policy CIR-23, the County will support measures that eliminate or reduce the length of vehicle trips. Such measures could include:

  - Increased efforts toward construction of affordable and workforce housing units, and additional incentives for construction of farm labor housing in the County;
  - Coordination between local agencies, including local chambers of commerce, the County, cities and town, to facilitate business partnerships and interconnectivity using shared transportation facilities, such as shuttles;

DRAFT

- Increased parking reductions from that currently allowed in the zoning ordinance, for any two or more developments that offer opportunities for bicycle or pedestrian activity between them, such as shared parking lots and privately-maintained multi-use paths;
- Transportation system impact fee incentives for discretionary and private development projects for which the County and project applicant agree that the applicant will construct planned pedestrian and bicycle transportation facilities, including but not limited to bicycle lanes and multi-use paths.

- Policy CIR-23:

  The County strongly supports Transportation Demand Management (TDM) strategies as a means of accommodating economic growth while moderating the negative effects of personal vehicle travel on the County's transportation infrastructure and on the quality of life of County residents and visitors. Non-residential development in the County shall include TDM strategies to reduce single-occupant vehicle use, thereby encouraging more energy-efficient forms of transportation and contributing to the County's greenhouse gas emission reduction goals. The County may require ongoing monitoring of vehicle trips to non-residential developments, in order to evaluate the effectiveness of the TDM strategies employed. TDM strategies to be considered include but are not limited to:

  - Subsidized transit passes or other incentives for transit usage;
  - Participation in a neighborhood or employer-sponsored shuttle program;
  - Provision of multi-modal connections to nearby transit stops, neighboring properties, or other destinations;
  - On-site accommodation for bicyclists (such as bicycle parking facilities and showers/lockers for employees who bicycle);
  - Incentives for carpool/vanpool participation, and/or priority parking for carpool/vanpool users;
  - Alternative work schedules/telecommuting;
  - Participation in a subsidized car share or ride share program; and,
  - Modifications to parking policies, such as parking pricing, reduced supply, or financial incentives for employees who do not use a single occupant vehicle or transportation network company.

As described above, the proposed project elements and the recommended TDM measures would achieve a total trip reduction of greater than 15 percent compared with the unmitigated trip generation estimate; therefore, with the incorporation of the proposed TDM measures, the project would be consistent with Policy CIR-7. The project includes provision of six on-site residential units for project employees, a trip reduction measure recommended in Policy CIR-8. The recommended TDM measures include subsidized transit passes for employees and on-site bicycle parking facilities and showers/lockers for employees who bicycle, both of which were identified as potential measures in Policy CIR-23. In addition, promotion of non-vehicle transportation options is recommended, and the project would include trail crossing improvements on Lodi Lane at the intersection with SR 29. While TDM measures for guests are not specifically addressed in the General Plan, given the proximity of the project to the recently completed segment of the Napa Valley Vine Trail, the provision of bicycles for use by guests would further support the Policy CIR-7 direction regarding trip reduction.

Conclusions and Recommendations

- The project as currently defined would result in 645 new daily trips according to standard ITE rates without considering internal capture or TDM measures, including 33 trips during the weekday a.m. peak hour and 57 trips during the weekend midday peak hour.

- The project would have a less-than-significant transportation VMT impact without need for any mitigation.

- To help support GHG reduction and General Plan consistency, the project should implement the recommended trip reduction measures to reduce employee and visitor trips. This includes the provision of on-site employee housing to reduce employee commute trips, encouraging and incentivizing non-vehicle transportation for employees living off-site, and providing bicycles for use by visitors. The employee-focused measures would be made available to existing employees on the site as well as those associated with the proposed hotel.

- After accounting for internal capture trips, on-site employee housing, employee trip reduction programs, and visitor trip reduction programs, project-generated trips would be reduced to 19 percent below estimates using standard ITE rates. This exceeds the County requirement for projects to reduce trips to 15 percent below expected levels.

Please let us know if you have any questions.

Sincerely,

Barry Bergman, AICP
Senior Planner

Cameron Nye, PE (Traffic)
Transportation Engineer

Dalene J. Whitlock, PE (Civil, Traffic), PTOE
Senior Principal

DJW/bdb/NAX062-1.L1

DRAFT

February 3, 2020

Mr. Geoff Scott
Jackson Family Investments III, LLC (JFI)
421 Aviation Boulevard
Santa Rosa, CA 95403

Addendum to the *Traffic Impact Study for the Inn at the Abbey*

Dear Mr. Scott;

To reflect changes to the site plan for the Inn at the Abbey that have occurred since our traffic study was completed, the following additional information is being provided. This letter is an addendum to the *Traffic Impact Study for the Inn at the Abbey* (TIS), dated August 16, 2019. This addendum was prepared specifically to address the expanded parking supply now proposed.

As evaluated in the TIS, the supply of 198 parking spaces that was proposed when the TIS was prepared was determined to be adequate for the estimated peak demand of 196 spaces. Since the slightly smaller supply was determined to be adequate, the currently proposed supply of 203 spaces would also be adequate and would provide further capacity that could accommodate excess demand. The addition of five parking spaces would not have any impact on the other findings and recommendations contained in the TIS. The project site plan showing the new parking supply is enclosed.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

Cameron Nye, EIT
Associate Engineer

REGISTERED PROFESSIONAL ENGINEER
DALENE J. WHITLOCK
TR001552
TRAFFIC
STATE OF CALIFORNIA

Dalene J. Whitlock, PE, PTOE
Senior Principal

DJW/cn/NAX062.L1

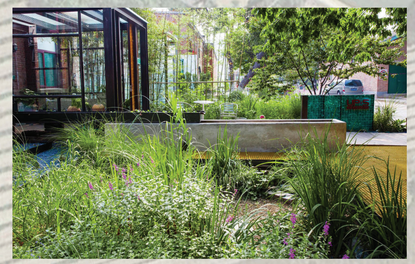
Enclosure: Site Plan

WATER EFFICIENT LANDSCAPE NOTES:

1. ALL NEW LANDSCAPE SHALL COMPLY WITH CALIFORNIA'S MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO)
2. WHERE NEEDED, NEW LANDSCAPE PLANTINGS WILL BE WATERED BY AN AUTOMATIC, PERMANENT, HIGHLY EFFICIENT IRRIGATION SYSTEM
3. GREYWATER WILL BE USED FOR IRRIGATION WHERE PRACTICAL

EXISTING STONE WINERY BUILDING

TIERED LANDSCAPE WALLS ALONG ENTRY DRIVE



LANDSCAPE BASED STORMWATER MANAGEMENT

LANDSCAPE SHEET INDEX

SHEET NUMBER	SHEET TITLE
L1	CONCEPTUAL LANDSCAPE MASTER PLAN
L2	EXISTING TREE PLAN

LANDSCAPE AREA:

TOTAL PROPOSED NEW LANDSCAPE AREA:	79,300 S.F.

PARKING TABULATION

PARKING AREA:	# OF SPACES:
GARAGE A	54
LOT B	33
LOT C	37
LOT D	9
LOT E	48
LOT F (VALET ONLY)	0
LOT G	14
LOT H	8
TOTAL PROVIDED	203
BICYCLES:	
COVERED	6
UNCOVERED	12
TOTAL PROVIDED	18
REQUIRED	10

(E)OAKS
EXISTING VINEYARD TO REMAIN
(E) WATER TANK
(E)OAKS
EXISTING LANE - FIRE ACCESS
(E)OAK
PARKING AREA "E" RE-STRIPE & RESURFACE (48 SPACES)
BLDG 4 EXISTING SERVICE & MAINT.
RES 4
EXISTING VINEYARD TO REMAIN
RES 3
BLDG 2 EXISTING WINERY
(E)OAK
PREVIOUSLY APPROVED ELEVATOR
BLDG 5 (E) OFFICE BUILDING
EXISTING COURTYARD
BLDG 3 EXIST. COTTAGE
STAIR TOWER
PARKING LOT "B" CHIP SEALED (33 SPACES)
"ORCHARD" TREE PLANTING
GREEN/LIVING WALLS
ROOF GARDEN/LIVING ROOF
LANDSCAPE BASED STORM-WATER MANAGEMENT, SEE CIVIL FOR COMPLETE L.I.D STRATEGY PLANS
PARKING FOR (4) BICYCLES
ELECTRIC VEHICLE CHARGING STATION
+/- 1/2 MILE TO PRIMARY CL. II BIKE ROUTE
LODI LANE
RES 2
BLDG. E
BLDG. D
SOLAR ARRAY (TYPICAL), SEE ARCHITECTURAL PLANS
BLDG. F
BLDG. C
PARKING LOT "H" (8 SPACES)
TASTING
BLDG 1 EXISTING STONE BUILDING
(6) BIKES
RETAIL
PARKING GARAGE "A" BELOW (54 SPACES)
RECEPTION
RESTAURANT
LOT "F" (VALET ONLY)
PARKING LOT "C" (37 SPACES)
LOT "G" (14 SPACES)
(4) BIKES
ORCHARD TREE PLANTING
BLDG B
(4) BIKES
BLDG A - NORTH HOTEL COMPLEX 50 GUEST ROOMS PLUS RETAIL
MAIN HOTEL ENTRIES
29 ROOM HOTEL (SOUTH)
MAIN ENTRY DRIVE
GARAGE ENTRY
SUNKEN LOT "D" CHIP SEALED (9 SPACES)
RELOCATED TRASH ENCLOSURE TO ACCOMMODATE "VINE TRAIL" BIKE LANE
BUS STOP (VINE ROUTES 10 & 29)
STATE HWY 29
SHADE TREES ON SOUTH SIDE OF BUILDING
SIGN
GREEN/LIVING WALLS
"VINE TRAIL" BIKE LANE
St Helena Hwy
St Helena Hwy
3032
29
128

N

0 40' 80'

THE INN
Est. 1886
AT THE ABBEY

L1 - LANDSCAPE MASTER PLAN

USE PERMIT APPLICATION JANUARY 2020

Traffic Impact Study for the Inn at the Abbey

Prepared for the County of Napa

Submitted by
W-Trans

August 16, 2019

This page intentionally left blank

Table of Contents

Executive Summary 1
Introduction 2
Transportation Setting 5
Capacity Analysis 10
Alternative Modes 21
Access and Circulation 23
Transportation Demand Management 25
Parking 27
Conclusions and Recommendations 29
Study Participants and References 31

Figures

1. Study Area and Lane Configurations 3
2. Alternative Modes 8
3. Traffic Volumes 13
4. Site Plan 16
5. Project Driveway Locations 17

Tables

1. Trip Generation Summary for Existing and Permitted Uses 4
2. Collision Rates at the Study Intersections 6
3. Collision Rates for the Study Roadway Segments 7
4. Planned Bicycle Facilities Summary 9
5. Two-Way Stop-Controlled Intersection Level of Service Criteria 10
6. Existing Peak Hour Intersection Levels of Service 14
7. Future Peak Hour Intersection Levels of Service 15
8. Trip Generation Summary for Existing and Proposed Uses 18
9. Trip Distribution Assumptions 18
10. Existing and Existing plus Project Peak Hour Intersection Levels of Service 19
11. Future and Future plus Project Peak Hour Intersection Levels of Service 19
12. Peak Demand Parking Analysis 28

Appendices

A. Winery Traffic Information/Trip Generation Sheet
B. Collision Rate Calculations
C. Traffic Count Data, Existing Driveway Volumes, Heavy Vehicle Data, Future Volume Projections
D. Intersection Level of Service Calculations
E. Signal Warrants Analysis
F. Queuing Calculations
G. Speed Survey Data
H. Turn Lane Warrants and Dimensions
I. Shared Parking Summary

This page intentionally left blank

Executive Summary

The proposed project is the development of a 79-room hotel on the existing Freemark Abbey Winery site located at 3022 St. Helena Highway North (SR 29) in the County of Napa. The site is currently occupied by a winery, tasting room, restaurant, café, and retail space, and hosts events, all of which would remain with the project. The site has additional permitted uses consisting of a second restaurant, a motel, a retail wine shop, an art gallery, and commercial retail space that would be replaced by the proposed resort. Altogether, the site is permitted for 1,586 daily trips including 158 trips during the weekday p.m. peak hour and 240 trips during the weekend midday peak hour, though based on driveway counts collected in April 2017, the existing uses generate 366 daily trips on average including 32 weekday p.m. peak-hour trips and 33 weekend midday peak-hour trips, meaning the site is operating well below permitted levels.

The proposed hotel would be expected to result in 645 new daily trips on average, including 33 trips during the weekday p.m. peak hour and 57 trips during the weekend midday peak hour; however, when added to the existing trips, the site would still generate 575 less daily trips on average than if all the permitted uses were operational, including 93 fewer trips during the weekday p.m. peak hour and 150 fewer trips during the weekend midday peak hour.

The study area included the intersections of Lodi Lane with SR 29 and Silverado Trail. Analysis indicates that under Existing Conditions, which includes traffic associated with all the existing uses on-site, the study intersections are currently operating acceptably overall and on all side-street approaches based on both Caltrans and County of Napa standards. Upon the addition of project-related traffic to existing volumes, both study intersections would be expected to continue operating acceptably at the same levels of service as Existing Conditions. Further, the delays would be less than those experienced under Permitted Conditions and a traffic signal would not be warranted.

Under Future Conditions, the intersection of Silverado Trail/Lodi Lane would be expected to continue operating acceptably during both peak hours based on County standards, without or with the addition of project-related traffic. SR 29/Lodi Lane would be expected to operate acceptably overall during both peak hours based on Caltrans standards; however, operation on the Lodi Lane approach would be expected to deteriorate to LOS E, which would be considered unacceptable based on County standards. The project would be responsible for more than ten percent of the anticipated increase in traffic on the Lodi Lane approach by the year 2030 so the project's impact would be considered *significant*. Striping to provide separate left- and right-turn lanes on the Lodi Lane approach to SR 29 would reduce the project's impacts under Future Conditions to *less-than-significant*, and this improvement is recommended as a project mitigation. Despite the large growth expected to occur by the future year 2030, a traffic signal would not be warranted under the anticipated future volumes, without or with the addition of project-generated traffic.

The existing storage length in the southbound left-turn lane on SR 29 at Lodi Lane is adequate to accommodate the addition of project traffic under all evaluated scenarios. Neither a right-turn lane nor right-turn taper would be warranted at the main entrance on SR 29; however, a left-turn lane would be warranted under the anticipated future volumes, without or with the proposed project. Rather than constructing a left-turn lane that complies with Caltrans highway design standards, which would require a transition length of 600 feet and relocating the alignment of SR 29 to avoid the historic stone wall along the property frontage, it is recommended that left-turn movements be prohibited at the main entrance; drivers accessing the site from the north should use the existing left-turn lane at Lodi Lane to enter the site.

Pedestrian, bicycle, and transit facilities are adequate to serve the project site given the location and anticipated demand and the applicant has been coordinating with NVVTC and NVTA to ensure that sufficient right-of-way is being dedicating along the project frontage to accommodate the planned Vine Trail alignment. Adequate sight distance is available along SR 29 and Lodi Lane to accommodate all turns into and out of site driveways. Based on shared parking concepts, the proposed parking supply of 198 spaces would be adequate for the peak demand of 196 spaces.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with the proposed development of a hotel on the Freemark Abbey Winery site located at 3022 St. Helena Highway North (State Route (SR) 29) in the County of Napa. The traffic study was completed in accordance with the criteria established by the County of Napa and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide County staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the County's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The proposed project includes the development of a 79-room hotel on the existing Freemark Abbey site, which is occupied by a winery, tasting room, restaurant, café, and retail space and is permitted for additional uses, although not operating, consisting of a second restaurant, a motel, a retail wine shop, an art gallery, and commercial retail space. No changes are proposed to the existing uses; however, the proposed hotel would be constructed in lieu of the permitted uses that are not in operation. As proposed, 50 rooms would be in a single building on the parcel north of Lodi Lane and 29 rooms would be located south of Lodi Lane. The site would continue to be accessed via the existing driveways on SR 29 and Lodi Lane, though the driveway to the southern parcel would be modified to include a one-way drive aisle with a designated drop-off area. Parking would be provided in a combination of surface lots and an underground parking garage.

The location of the project site is shown in Figure 1.

Permitted Traffic Levels

Because the Freemark Abbey site is permitted for additional uses beyond the existing winery, tasting room, restaurant, café, and retail space, trips associated with all the permitted uses (both existing and non-operational) were calculated to develop volumes that would be expected if all the use permits were fully implemented and the site was operating at full capacity. While only existing uses are relevant to the environmental review process, the permitted traffic levels were developed for the purpose of comparing traffic volumes for what is already permitted to what is proposed. The site is permitted for the following existing uses and intensities, though not all are fully operational:

- 60,000-gallon winery (existing);
- Public tasting room (existing);
- 6,500 square-foot restaurant (existing);
- 950 square-foot café (existing);
- 985 square feet of retail wine space (existing);
- 5-room motel;
- 5,100 square-foot restaurant;

nax062.ai 3/18

Traffic Impact Study for the Inn at the Abbey

Figure 1– Study Area and Lane Configurations

W-Trans

- 1,800 square-foot retail wine shop;
- 1,700 square-foot art gallery; and
- 3,500 square feet of commercial retail space.

Trip Generation

The anticipated trip generations for all the permitted uses except the winery and tasting room were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012. Rates for "Quality Restaurant" (Land Use #931) and "Motel" (Land Use #320) were applied to the restaurant and motel uses, respectively, while rates for "Specialty Retail Center" (Land Use #310) were applied to the café, commercial retail space, art gallery, and wine shop as this was determined to be the most similar land use. It should be noted that because none of these land uses include rates for the weekend midday peak hour, the rates for the weekday p.m. peak hour of the generator were applied to the weekend midday peak hour. The trip generation for the winery and tasting room was developed using the Napa County Winery Traffic Information/Trip Generation Sheet, which is provided in Appendix A. Based on these rates and sources, the site is permitted for a total of 1,586 daily trips, including 158 trips during the weekday p.m. peak hour and 240 trips during the weekend midday peak hour. These results are summarized in Table 1.

Table 1 – Trip Generation Summary for Existing and Permitted Uses

Land Use	Units	Daily		Weekday PM Peak			Weekend MD Peak		
		Rate	Trips	Trips	In	Out	Trips	In	Out
Winery & Tasting Room*	n/a	n/a	119	45	15	30	66	33	33
Quality Restaurant	11.600 ksf	89.95	1,043	87	58	29	126	74	52
Motel	5 rooms	5.63	28	2	1	1	3	2	1
Specialty Retail	8.395 ksf	44.32	396	24	11	13	45	25	20
Total Permitted			**1,586**	**158**	**85**	**73**	**240**	**134**	**106**

Note: * = Developed using the County of Napa Winery Traffic Information/ Trip Generation Sheet; ksf = 1,000 square feet

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the sections of SR 29 between York Lane and Ehlers Lane, Lodi Lane between SR 29 and Silverado Trail, Silverado Trail between Bournemouth Road and Glass Mountain Road, the project access points, and the following intersections:

1. SR 29/Lodi Lane
2. Silverado Trail/Lodi Lane

Operating conditions during the weekday p.m. and weekend midday peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The weekday p.m. peak period occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute; the weekend midday peak period generally occurs between 12:00 and 2:00 p.m. At the study intersections the weekday p.m. peak hour occurred between 4:15 and 5:15 p.m. and the weekend midday peak hour occurred between 12:45 and 1:45 p.m.

Study Intersections

For the purposes of this study, SR 29 and Silverado Trail were considered to run north-south and Lodi Lane was considered to run east-west.

SR 29/Lodi Lane is an unsignalized tee-intersection stop-controlled on the westbound Lodi Lane approach. A left-turn lane is provided on the southbound SR 29 approach and the Lodi Lane approach has a flared right-turn lane with storage space to accommodate approximately two vehicles.

Silverado Trail/Lodi Lane is an unsignalized tee-intersection stop-controlled on the eastbound Lodi Lane approach. The eastbound approach has a flared right-turn lane with storage space to accommodate approximately one vehicle.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Study Roadways

SR 29 adjacent to the project site predominantly runs north-south and has two 12-foot travel lanes with a posted speed limit of 50 miles per hour (mph). The roadway is mostly straight adjacent to the site; however, there is a horizontal curve approximately 500 feet north of the site and the roadway has about a four percent grade in the northbound direction. Along the project frontage the roadway varies in width between approximately 36 and 46 feet depending on the width of the shoulders and the presence of a left-turn lane. Based on traffic counts collected in April 2017 specifically for this study, the average daily traffic (ADT) along the project frontage is approximately 15,600 on weekdays and 13,600 on weekend days.

Lodi Lane is a two-lane roadway that runs northeast-southwest between SR 29 and Silverado Trail, though as noted above the roadway was considered to run east-west for the purpose of this study. The roadway is approximately 30 feet wide and has a posted speed limit of 40 mph. Based on traffic counts collected in April 2017 specifically for this study, the ADT adjacent to the site is approximately 1,100 on weekdays and 900 on weekend days.

Silverado Trail is a two-lane roadway that winds its way northwest-southwest mostly parallel to SR 29 throughout the Napa Valley. The segment between Bournemouth Road and Glass Mountain Road has a 12-foot travel lane and five-foot bike lane in each direction, is approximately 34 feet wide, and has a posted speed limit of 50 mph, though the horizontal curves to the south of Lodi Lane have a posted advisory speed of 40 mph and the curve to the north has a posted advisory speed of 35 mph.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates for the study intersections and roadway segments were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 1, 2014 through December 31, 2018.

As presented in Table 2, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2014 Collision Data on California State Highways*, California Department of Transportation (Caltrans). The intersection of SR 29/Lodi Lane had a collision rate below the statewide average indicating that the intersection is operating acceptably with regards to safety; however, the intersection of Silverado Trail/Lodi Lane has a collision rate substantially higher than the statewide average which warranted further analysis.

Table 2 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2014-2018)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. SR 29/Lodi Ln	3	0.13	0.16
2. Silverado Trail/Lodi Ln	5	0.46	0.16

Note: c/mve = collisions per million vehicles entering

Further review of the individual collisions that occurred at Silverado Trail/Lodi Lane revealed that of the five total collisions, three were rear-ends attributed to unsafe speeds and four of the five occurred in the northbound direction. The other two collisions were an overturn attributed to unsafe speed and a broadside. Physical improvements such as installation of a left-turn lane are not feasible due to lack of right-of-way and geographic constraints, including drainage facilities on one side and a hill on the other. Consideration was given to installation of all-way stop-controls but doing so would result in LOS F operation so is not recommended. The two horizontal curves to the south of the intersection have a posted advisory speed of 40 mph and there is approximately 300 feet of stopping sight distance available in the northbound direction while traversing the curves, which is the exact amount recommended by Caltrans for speeds of 40 mph, so adequate stopping sight distance is provided for vehicles traveling at the advisory speed. However, if motorists travel at speeds above the posted advisory speed, sight distance is less than the recommended minimum. Installation of a speed feedback sign near the curves would make motorists more aware of their speed and encourage them to travel at a more appropriate speed for the amount of stopping sight distance available. It is recommended that the applicant work with County staff to install a speed feedback sign on Silverado Trail in the northbound direction between the driveway to Melka Estates Winery and the horizontal curve. Additionally, increased enforcement may reduce unsafe speeds on Silverado Trail and consequently the frequency of rear-end collisions.

Collision rates for the study segments are compared to statewide averages for similar facilities in Table 3. SR 29 experienced collisions at a below-average rate and Silverado Trail had a calculated collision rate higher than the statewide average; there were no collisions reported on Lodi Lane during the evaluation period. The collision rate calculations for the study intersections and segments are provided in Appendix B.

Table 3 – Collision Rates for the Study Roadway Segments			
Study Roadway Segment	**Number of Collisions (2014-2018)**	**Calculated Collision Rate (c/mvm)**	**Statewide Average Collision Rate (c/mvm)**
1. SR 29 – York Ln to Ehlers Ln	12	0.55	1.16
2. Lodi Ln – SR 29 to Silverado Trail	0	0.00	1.16
3. Silverado Trail – Bournemouth Rd to Glass Mtn Rd	15	2.10	1.20

Note: c/mvm = collisions per million vehicles miles

Of the 15 total collisions that occurred on the study segment of Silverado Trail, more than half had unsafe speed as the primary collision factor, which is consistent with the collisions that occurred at the intersection of Silverado Trail/Lodi Lane. Five collisions were attributed to improper turning or wrong side of the road and are likely due to the fact that the 0.7-mile roadway segment has five horizontal curves. Installation of a speed feedback sign near the Melka Estates Winery driveway would not just help to reduce collisions at the Lodi Lane intersection, but along the segment in general.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. As might be expected given the rural location of Freemark Abbey Winery, a connected pedestrian network is lacking, though such facilities would not be appropriate in this setting with the exception of a regional trail to which connectivity would be appropriate.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

There are existing Class II bike lanes on Silverado Trail in the project study area and there are plans to provide Class II bike lanes on SR 29 along the project frontage and a Class I trail (the Vine Trail) parallel to SR 29 that would ultimately connect Vallejo to Calistoga. A 12.5-mile segment of the Vine Trail has already been constructed between south Napa and Yountville; the Napa Valley Vine Trail Coalition (NVVTC) has stated that they are hoping to complete the rest of the trail network by 2022. The existing and planned bicycle and transit facilities serving the site are shown in Figure 2. Table 4 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *NCTPA Countywide Bicycle Plan*, Napa County Transportation and Planning Agency (NCTPA), 2012. It should be noted that the Napa Valley Transportation Authority (NVTA) has retained a consultant firm that is currently in the process of updating the countywide bike plan. A draft version of the updated plan was prepared in February 2019 and is available on the NVTA website, but the plan has not yet been adopted so the 2012 plan was used for this analysis.

nax062.ai 3/18

Traffic Impact Study for the Inn at the Abbey

Figure 2– Alternative Modes

W-Trans

Table 4 – Planned Bicycle Facilities Summary				
Status **Facility**	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Silverado Trail	II	2.9	Bale Ln	Deer Park Rd
Planned				
Vine Trail	I	47.0	Calistoga	Vallejo
SR 29	II	1.8	Deer Park Rd	Bothe State Park

Source: *NCTPA Countywide Bicycle Plan*, Napa County Transportation and Planning Agency, 2012

Transit Facilities

Transit Services throughout Napa County are provided by Napa Valley Transit (VINE). VINE Route 10 provides service between Napa Valley College and Calistoga seven days a week and stops on SR 29 just north of the site in the southbound direction and along the project frontage in the northbound direction. Both stops are equipped with benches and the stop north of the site has an overhead shelter.

All vehicles used by VINE are wheelchair accessible and conform to standards set forth by the Americans with Disabilities Act (ADA). However, dial-a-ride, also known as paratransit or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. VINE Go is VINE's paratransit service and is designed to serve the needs of individuals with disabilities in the cities of Calistoga, St. Helena, Napa, American Canyon, the Town of Yountville and the unincorporated areas of Napa County. Reservations are required and, while can be made the same day of the trip, are recommended to be made in advance.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using the two-way stop-controlled methodology published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. The "Two-Way Stop-Controlled" intersection capacity methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The ranges of delay associated with the various levels of service are indicated in Table 5.

Table 5 – Two-Way Stop-Controlled Intersection Level of Service Criteria	
LOS A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.
LOS B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.
LOS C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.
LOS D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.
LOS E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.
LOS F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Traffic Operation Standards

Napa County

In the Circulation Element of the *Napa County General Plan*, the following policies have been adopted:

- **Policy CIR-31** – *The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is efficient in providing local access.*

- **Policy CIR-38** – *The County seeks to maintain operations of roads and intersections in the unincorporated County area that minimize travel delays and promote safe access for all users. Operational analysis shall be conducted according to the latest version of the Highway Capacity Manual and as described in the current version of the County's Transportation Impact Study Guidelines. In general, the County seeks to maintain Level of Service (LOS) D on arterial roadways and at signalized*

intersections, as the service level that best aligns with the County's desire to balance its rural character with the needs of supporting economic vitality and growth.

In situations where the County determines that achieving LOS D would cause an unacceptable conflict with other goals and objectives, minimizing collisions and the adequacy of local access will be the County's priorities. Mitigating operational impacts should first focus on reducing the project's vehicular trips through modifying the project definition, applying TDM strategies, and/or applying new technologies that could reduce vehicular travel and associated delays; then secondarily should consider physical infrastructure changes. Proposed mitigations will be evaluated for their effect on collisions and local access, and for their effectiveness in achieving the maximum potential reduction in the project's operational impacts (see the County's Transportation Impact Study Guidelines for a list of potential mitigation measures).

The following roadway segments are exceptions to the LOS D standard described above:

- *State Route 29 in the unincorporated areas between Yountville and Calistoga: LOS F is acceptable.*
- *Silverado Trail between State Route 128 and Yountville Cross Road: LOS E is acceptable.*
- *State Route 12/121 between the Napa/Sonoma county line and Carneros Junction: LOS F is acceptable.*
- *American Canyon Road from I-80 to American Canyon City Limit: LOS E is acceptable.*

To provide a more quantitative method of adhering to the above standards, the County refers to G*uidelines for Interpretation of General Plan Circulation Policies on Significance Criteria* (Fehr & Peers, 2015). The document establishes thresholds of significance for road segments and different intersection control types. The memorandum states a project would cause a significant impact requiring mitigation if, for existing conditions:

- *A signalized intersection operates at LOS A, B, C, or D during the selected peak hours without Project trips, and the LOS deteriorates to LOS E or F with the addition of Project trips; or*

- *A signalized intersection operates at LOS E or F during the selected peak hours without Project trips, and the addition of Project trips increases the total entering volume by one percent or more.*
  - *Project Contribution % = Project Trips ÷ Existing Volumes*

- *An unsignalized intersection operates at LOS A, B, C, or D during the selected peak hours without Project trips, and the LOS deteriorates to LOS E or F with the addition of Project traffic; the peak hour traffic signal warrant criteria should also be evaluated and presented for informational purposes; or*

- *An unsignalized intersection operates at LOS E or F during the selected peak hours without Project trips, and the project contributes one percent or more of the total entering traffic for all-way stop-controlled intersections, or ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections; the peak hour traffic signal criteria should also be evaluated and presented for informational purposes. Both of those volumes are for the stop-controlled approaches only. Each stop-controlled approach that operates at LOS E or F should be analyzed individually*
  - *<u>All-Way Stop-Controlled Intersections</u> – The following equation should be used if the all-way stop-controlled intersection operates at LOS E or F without the Project:*
    - *Project Contribution % = Project Trips ÷ Existing Volumes*
  - *<u>Side-Street Stop-Controlled Intersections</u> – The following equation should be used if the side-street stop-controlled intersection operates at LOS E or F without the Project:*
    - *Project Contribution % = Project Trips ÷ Existing Volumes*

- *An arterial segment operates at LOS A, B, C or D during the selected peak hours without Project trips, and deteriorates to LOS E or F with the addition of Project trips; or*

- *An arterial segment operates at LOS E or F during the selected peak hours without Project trips, and the addition of Project trips increases the total segment volume by one percent or more. The following equation should be used if the arterial segment operates at LOS E or F without the Project:*
    - *Project Contribution % = Project Trips ÷ Existing Volumes*

Further, a project would cause a significant impact requiring mitigation if, for cumulative (future) conditions, the Project's volume is equal to, or greater than five percent of the difference between cumulative (future) and existing volumes.

- <u>Cumulative Conditions</u> – A *Project's contribution to a cumulative condition would be calculated as the Project's percentage contribution to the total growth in traffic. This calculation applies to arterials, signalized intersections, and unsignalized intersections.*
    - *Project Contribution % = Project Trips ÷ (Cumulative Volumes – Existing Volumes)*

Caltrans

The Caltrans standard was used for the intersection of SR 29/Lodi Lane. In the *Guide for the Preparation of Traffic Impact Studies*, Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D. Based on previous discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay, and *not* that associated with any single movement or approach. Under this approach, if one movement experiences very high delay and has moderate to high traffic volumes, the overall delay and level of service should reflect the critical nature of this condition. However, if one movement is expected to experience high delay, but has very low traffic volumes, the overall intersection operation will likely still meet Caltrans standards.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday p.m. and weekend midday peak periods. This condition does not include project-generated traffic volumes. Traffic volumes at the study intersections and driveways were obtained in April 2017 during clear weather conditions and normal site operations. Count data was also collected in August 2017 to capture harvest activity; however, three of the four peak periods had volumes the same as or lower than the April volumes, so to provide conservative results the spring counts were retained for the analysis.

Peak hour factors (PHFs) were calculated based on the counts obtained and used in the levels of service calculations, except where the calculated PHF was below 0.90, in which case 0.90 was used as a "floor" to avoid overly conservative results. It should be noted that based on the counts, the calculated PHF at SR 29/Lodi Lane was 0.98 during the p.m. peak hour which is considered high but is due to the fact that the demand at the intersection is consistent throughout the hour. Additionally, the percentage of heavy vehicles at each intersection was calculated based on data collected during harvest in September 2017. For the purpose of this study, heavy vehicles were considered to be trucks hauling grapes or those with five or more axles. The data indicates that heavy vehicles represent four percent of all vehicles through the intersection of SR 29/Lodi Lane during the weekday p.m. peak hour and two percent during the weekend midday peak hour. At Silverado Trail/Lodi Lane, heavy vehicles represent two and three percent of vehicles during the weekday p.m. and weekend midday peak hours, respectively. The PHF's are included in the traffic counts in Appendix C along with a summary of the existing volumes collected at the site's driveways and the heavy vehicle data.

Intersection Levels of Service

The Lodi Lane approach to SR 29 is operating at LOS C and the Lodi Lane approach to Silverado Trail is operating at LOS B, during both peak hours. The Existing traffic volumes are shown in Figure 3. A summary of the

nax062.ai 3/18

Traffic Impact Study for the Inn at the Abbey

Figure 3– Traffic Volumes

intersection level of service calculations is contained in Table 6, and copies of the Level of Service calculations for all evaluated scenarios are provided in Appendix D.

Table 6 – Existing Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS
1. SR 29/Lodi Ln	0.8	A	1.2	A
Westbound (Lodi Ln) Approach	*22.3*	*C*	*24.3*	*C*
2. Silverado Trail/Lodi Ln	1.1	A	1.2	A
Eastbound (Lodi Ln) Approach	*10.9*	*B*	*12.3*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Because County LOS standards state that signal warrants should be evaluated for unsignalized intersections, a signal warrants analysis was performed for both intersections during both peak hours. Chapter 4C of the *California Manual on Uniform Traffic Control Devices for Streets and Highways* (CA-MUTCD) provides guidance on when a traffic signal should be considered based on nine different warrants, or criteria. For the purposes of this study, Warrant 3, the Peak Hour volume warrant, which determines the need for traffic control based on the highest volume hour of the day, was used as an initial indication of traffic control needs. The use of this signal warrant is common practice for planning studies. Based on Existing volumes, a traffic signal is not warranted at either of the study intersections during either of the peak hours evaluated. A copy of the signal warrants analysis for all evaluated scenarios in included in Appendix E.

Future Conditions

Future volumes for the horizon year 2030 were calculated based on output from the *Napa Solano Travel Demand Model*, maintained by the Solano Transportation Authority (STA). Base year (2010) and future (2030) segment volumes for the weekday p.m. peak hour were used to calculate growth factors for SR 29, Silverado Trail and Lodi Lane; it is noted that Lodi Lane is not included in the model, so the growth anticipated on Deer Park Road was assumed to be representative of Lodi Lane which is conservative in nature.

The growth factors projected by the model were then adjusted to account for the seven years of growth that occurred between the 2010 base year and 2017 existing volumes and multiplied by the existing counts to project likely Future weekday p.m. turning movement volumes at the study intersections. The same growth factors used for the weekday p.m. peak hour were used for the weekend midday peak hour as the model does not contain information for weekend days. A spreadsheet indicating derivation of the growth factors used to develop future volumes is provided in Appendix C.

Intersection Levels of Service

Under the anticipated Future volumes, the study intersections are expected to continue operating acceptably overall; however, the side street approach at SR 29/Lodi Lane would be expected to operate at LOS E during both peak hours. This operation would be considered acceptable under Caltrans standards, which apply to the overall operation of the intersection, but would be considered unacceptable based on the County of Napa's LOS standards. Despite the substantial growth anticipated by the travel demand model, a traffic signal would still not be warranted at either of the study intersections based on volumes during either of these peak hours. Operating conditions are summarized in Table 7 and future volumes are shown in Figure 3.

Table 7 – Future Peak Hour Intersection Levels of Service					
Study Intersection ***Approach***		**Weekday PM Peak**		**Weekend MD Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	SR 29/Lodi Ln	1.3	A	1.5	A
	Westbound (Lodi Ln) Approach	***39.5***	***E***	***37.6***	***E***
2.	Silverado Trail/Lodi Ln	0.8	A	1.3	A
	Eastbound (Lodi Ln) Approach	*19.7*	*C*	*34.0*	*D*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold Text** = Deficient operation

Project Description

As proposed, the project includes the development of a 79-room hotel on the existing Freemark Abbey site, which is occupied by a winery, tasting room, restaurant, café, and retail space and is permitted for additional uses, although not operating, consisting of a second restaurant, a motel, a retail wine shop, an art gallery, and commercial retail space. No changes are proposed to the existing uses or to events; however, the site would forgo the additional permitted uses not currently in operation to make room for the proposed hotel. As proposed in the site plan, 50 rooms would be located on the parcel north of Lodi Lane and 29 rooms would be located south of Lodi Lane. The site would continue to be accessed via the existing driveways on SR 29 and Lodi Lane, though the driveway to the southern parcel would be modified to include a one-way drive aisle with a designated drop-off area. Self-parking would be provided in surface lots and valet parking would occur in an underground parking garage.

The proposed project site plan is shown in Figure 4 and the locations of the project driveways are highlighted in Figure 5.

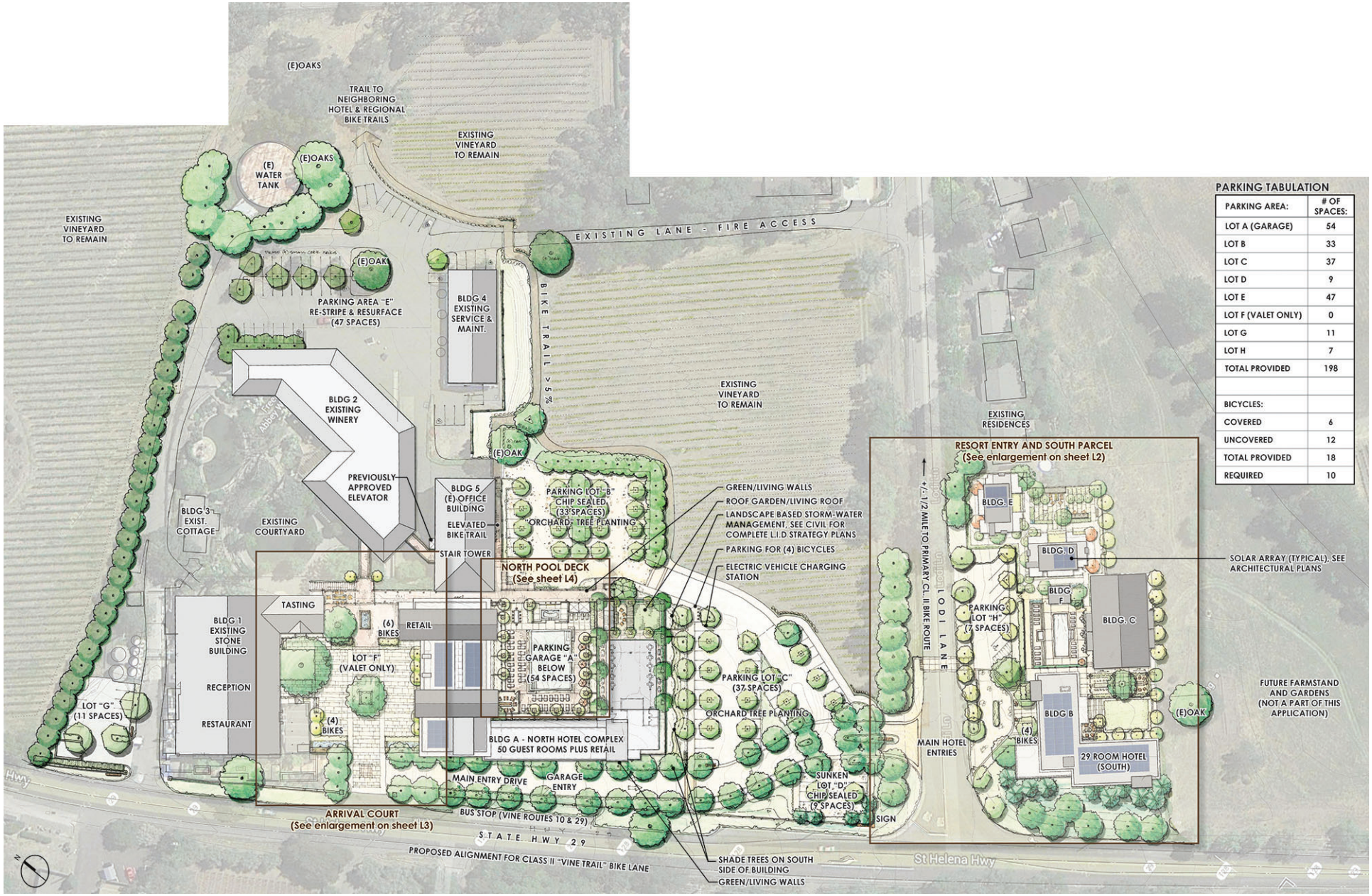
Trip Generation

Existing

Based on driveway counts collected in April 2017, the existing winery, tasting room, restaurant, café, and retail uses collectively generate an average of 366 trips per day, including 32 trips during the weekday p.m. peak hour and 33 trips during the weekend midday peak hour.

Proposed

To estimate the anticipated trip generation associated with the proposed hotel, standard rates for "Resort Hotel" (Land Use #330) were applied; however, it is noted that the manual does not include weekday daily or weekend peak hour rates for "Resort Hotel" so rates for "Hotel" (Land Use #310) were used for these periods. Based on these rates, the proposed project would be expected to generate an average of 645 trips per day, including 33 weekday p.m. peak hour trips and 57 trips during the weekend peak hour. When added to the existing trips, this translates to a total of 1,011 trips per day for the project site, including 65 trips during the a.m. peak hour and 90 trips during the p.m. peak hour. It is worth noting that this would be 575 fewer daily trips on average than if all the permitted uses were operational, including 93 less trips during the weekday p.m. peak hour and 150 less trips during the weekend midday peak hour. The existing and proposed trip generations are summarized in Table 8.



PARKING TABULATION

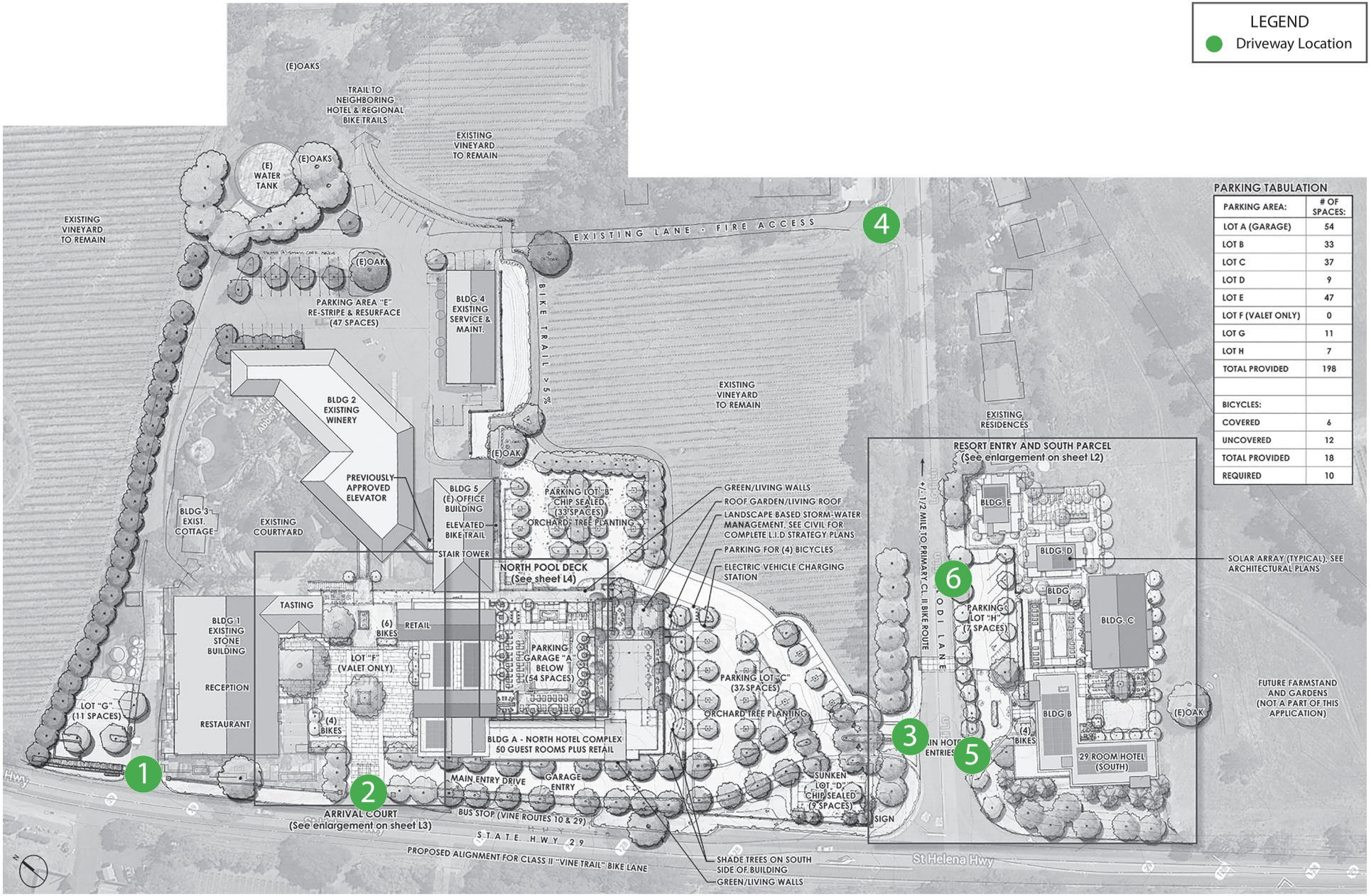
PARKING AREA:	# OF SPACES:
LOT A (GARAGE)	54
LOT B	33
LOT C	37
LOT D	9
LOT E	47
LOT F (VALET ONLY)	0
LOT G	11
LOT H	7
TOTAL PROVIDED	198
BICYCLES:	
COVERED	6
UNCOVERED	12
TOTAL PROVIDED	18
REQUIRED	10

Source: Girvin Associates, Inc. 10/17

062nax.ai 10/17

Traffic Impact Study for the Inn at the Abbey

Figure 4 – Site Plan



Source: Girvin Associates, Inc. 10/17

062nax.ai 10/17

Traffic Impact Study for the Inn at the Abbey

Figure 5 – Project Driveway Locations

Table 8 – Trip Generation Summary for Existing and Proposed Uses									
Land Use	**Units**	**Daily**		**Weekday PM Peak**			**Weekend MD Peak**		
		Rate	**Trips**	**Trips**	**In**	**Out**	**Trips**	**In**	**Out**
Existing									
Winery/Tasting Room/Restaurant/ Café/Retail*			366	32	13	19	33	21	12
Proposed									
Resort Hotel	79 rooms	-	-	33	14	19	-	-	-
Hotel	79 rooms	8.17	645	-	-	-	57	32	25
Total Proposed			645	33	14	19	57	32	25
Existing + Proposed			**1,011**	**65**	**27**	**38**	**90**	**53**	**37**

Note: * = Based on actual driveway counts collected in April 2017

Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing existing turning movements at the study intersections as well as anticipated travel patterns for patrons of the uses. The applied distribution assumptions are shown in Table 9.

Table 9 – Trip Distribution Assumptions	
Route	**Percent**
SR 29 (To/From North)	30%
SR 29 (To/From South)	50%
Silverado Trail (To/From North)	5%
Silverado Trail (To/From South)	15%
TOTAL	**100%**

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue operating acceptably at the same levels of service as under Existing Conditions. These results are summarized in Table 10 and project traffic volumes are shown in Figure 3.

Table 10 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

	Study Intersection *Approach*	Existing Conditions				Existing plus Project			
		Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	SR 29/Lodi Ln	0.8	A	1.2	A	1.1	A	1.6	A
	Westbound (Lodi Ln) Approach	*22.3*	*C*	*24.3*	*C*	*23.5*	*C*	*27.5*	*C*
2.	Silverado Trail/Lodi Ln	1.1	A	1.2	A	1.2	A	1.3	A
	Eastbound (Lodi Ln) Approach	*10.9*	*B*	*12.3*	*B*	*11.0*	*B*	*12.3*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Finding – The study intersections are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic to existing volumes and a traffic signal would not be warranted at either intersection.

Future plus Project Conditions

Upon the addition of project-related traffic to the anticipated future volumes, the study intersections are expected to continue operating at LOS A overall and the Lodi Lane approach to SR 29 would continue to operate at LOS E during both peak hours while the Lodi Lane approach to Silverado Trail would continue to operate at LOS C during the weekday p.m. peak hour and LOS D during the weekend midday peak hour. The Future plus Project operating conditions are summarized in Table 11.

Table 11 – Future and Future plus Project Peak Hour Intersection Levels of Service

	Study Intersection *Approach*	Future Conditions				Future plus Project			
		Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	SR 29/Lodi Ln	1.3	A	1.5	A	1.6	A	2.1	A
	Westbound (Lodi Ln) Approach	***39.5***	***E***	***37.6***	***E***	***43.7***	***E***	***44.3***	***E***
	Restripe to Provide RT Lane	-	-	-	-	***37.2***	***E***	***37.0***	***E***
2.	Silverado Trail/Lodi Ln	0.8	A	1.3	A	0.9	A	1.5	A
	Eastbound (Lodi Ln) Approach	*19.7*	*C*	*34.0*	*D*	*20.2*	*C*	*34.9*	*D*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold Text** = Deficient operation; Shaded cells = Cells with recommended improvements

Finding – Upon the addition of project-related traffic to Future volumes, the intersection of Silverado Trail/Lodi Lane would be expected to operate acceptably during both peak hours based on County standards. SR 29/Lodi Lane would be expected to operate acceptably during both peak hours based on Caltrans standards; however, the Lodi Lane approach would continue to operate at LOS E which would be considered unacceptable based on County standards. The project would be responsible for more than ten percent of the anticipated growth on the Lodi Lane approach by the year 2030, so the project's impact would be considered *significant* based on the County

standards applied. A traffic signal would still not be warranted at either intersection during either of the peak hours evaluated.

Recommendation – To mitigate the project's impact on the Lodi Lane approach to SR 29 under Future Conditions, it is recommended that the project restripe the approach to provide a dedicated right-turn lane. As seen in Table 11 above, doing so would reduce the delay on the Lodi Lane approach to less than the delay expected under Future Conditions without the project.

Queuing

Queuing in the southbound left-turn lane on SR 29 at Lodi Lane was evaluated to determine if the existing storage length would be adequate for the maximum anticipated queue. The two-way stop-controlled intersection queuing methodology developed by the Oregon Department of Transportation is the most current widely used methodology available and is accepted by Caltrans District 4. Based on Future plus Project volumes, which represents worst-case conditions, the maximum queue in the southbound left-turn lane was determined to be 75 feet, or three vehicles, during both the weekday evening and weekend midday peak hours, which could be accommodated within the existing turn pocket. The Queuing calculations are provided in Appendix E.

Queuing was also evaluated at the western driveway on Lodi Lane (Driveway 3) to see if there would be adequate space on eastbound Lodi Lane between the driveway and SR 29 to accommodate potential queuing from those waiting to turn left into the project site. Based on the same worst-case Future plus Project volumes, the maximum queue on eastbound Lodi Lane was determined to be 50 feet, or two vehicles, at the driveway during both the weekday p.m. and weekend midday peak hours. As proposed, there would be approximately 90 feet of stacking space on Lodi Lane eastbound between SR 29 and Driveway 3 which would be adequate room for queuing to occur without spilling into SR 29.

Finding – The existing storage capacity of 90 feet, or approximately three to four vehicles, in the southbound left-turn lane on SR 29 at Lodi Lane is adequate for the maximum anticipated queue under Future plus Project Conditions. Additionally, there would be adequate space for queues to form on Lodi Lane eastbound at Driveway 3 without spilling into SR 29.

Alternative Modes

Pedestrian Facilities

Given its rural location, lack of existing facilities, and the nature of the project site, project patrons are not expected to want to walk to the site. However, given the sprawling layout of the site and the presence of Lodi Lane separating the northern parcel from the southern parcel, there is a need for a connected pedestrian network within the site and from one side of Lodi Lane to the other.

Based on the project site plan, the existing and proposed facilities on-site would be connected via sidewalks and dedicated pedestrian paths. Additionally, there would be a crosswalk on Lodi Lane to facilitate pedestrian crossings between the northern and southern parcels. As shown in the site plan, the crosswalk would be located 150 feet east of SR 29, which would provide adequate stopping sight distance for drivers turning onto Lodi Lane from SR 29. Additionally, the crosswalk as proposed would include a Rectangular Rapid Flashing Beacon (RRFB) system that would provide a strobe-like warning to drivers when pedestrians are in the crosswalk.

Finding – The lack of pedestrian facilities serving the project site on SR 29 and Lodi Lane are consistent with the surrounding area and expected for the type of land use; however pedestrian facilities within the site and connecting facilities are adequate.

Bicycle Facilities

Because of the proximity to the future Vine Trail, which would mostly run parallel to SR 29 between Vallejo and Calistoga, the project has included bicycle facilities to ensure the site is accessible for bicyclists. The project would provide a total of 18 bicycle parking spaces on-site, six of which would be covered and a connection to the future Vine Trail is planned but is not yet finalized. The applicant has been working with the Napa Valley Vine Trail Coalition (NVVTC) and the Napa Valley Transportation Authority (NVTA) to ensure that sufficient right-of-way is being dedicated along the project frontage to accommodate the Vine Trail alignment. Although the current bike plan identifies the need for Class II bike lanes on SR 29 along the project frontage, the bike lanes have been removed and replaced with a Class III bike route in the February 2019 draft version of the updated bike plan. The Class III bike route would not require any additional right-of-way to be dedicated by the project beyond the Vine Trail, but the Class II bike lanes would so it is recommended that the applicant coordinate with NVVTC and NVTA to monitor the progress of the bike plan update and the status of the planned facilities on SR 29. The applicant has discussed constructing the section of the Vine Trail along the property frontage as part of the hotel project and obtaining credits toward the required traffic impact fees.

Finding – The shared use of minor streets, along with the planned projects in the vicinity, would provide adequate access for bicyclists.

Recommendation – The applicant should continue to work with NVVTC and NVTA to ensure that sufficient right-of-way is being dedicated for the planned facilities along the project frontage. If the planned facilities are not constructed before the hotel project, the applicant should explore the option of constructing the bike facilities as part of the project and obtaining traffic impact fee credits.

Bicycle Storage

Although the County does not specify bicycle parking requirements for wineries, since the project site is occupied with uses that do have specific requirements (Restaurant and Hotel), the site was evaluated based on Chapter 18.110 of the County's Municipal Code, "Off Street Parking and Loading Facilities." The County requires all

nonresidential uses that provide more than ten vehicle parking spaces to provide at least ten bicycle parking spaces. Additionally, if the site is required to provide 20 or more vehicle spaces then one-half of the total provided bicycle parking spaces should be covered.

Finding – The proposed bicycle parking supply exceeds County requirements.

Transit

The existing transit stops on SR 29 adjacent to the site are within acceptable walking distance and are adequate for the anticipated demand, though there are currently no amenities for transit riders such as a shelter or bench at the northbound stop on the east side of the highway. Although the southbound transit stop on SR 29 is on the opposite side of the highway as the project site, the stop has been accessed safely by pedestrians for some time and there is nothing proposed by the project that would impact its accessibility or safety. While it is understood that pedestrians may experience delays waiting for a gap in traffic to cross SR 29, installation of a crosswalk adjacent to the project site is not advised as it would generally result in less safe conditions for pedestrians due to the false sense of security associated with crosswalks. Pedestrians tend to be less cautious about watching approaching traffic when entering a crosswalk versus crossing without one. The existing condition wherein pedestrians understand that they must carefully observe oncoming traffic is therefore considered the best safety option for this specific location. The Vine Trail is planning a crossing north of the project site that will ultimately provide controlled pedestrian and bicycle access to the west side of SR 29, and although the specific location is undetermined, it will be in the vicinity so could be used by those uncomfortable with crossing adjacent to the project site.

Finding – Transit facilities serving the project site are adequate.

Recommendation – As part of the frontage improvements, a shelter and bench should be added to the transit stop on the east side of SR 29.

Access and Circulation

Site Access

The northern parcel has four existing driveways, two on SR 29 and two on Lodi Lane, all of which would remain with the project; the southern parcel is currently served by a single driveway that would be replaced with two new driveways. The project driveways are shown in Figure 5 and are numbered to correspond with the existing count data contained in Appendix C. Driveways 1 and 4 would primarily be used by employees, while the remaining driveways would be used by employees and guests. Driveways 2 and 3 would be the main entrances to the site and Driveway 2 would be the designated entrance for valet parking. Driveways on the northern parcel would be connected by a drive aisle that would provide access to the surface parking lots located south and east of the proposed resort as well as the underground parking garage. The southern parcel would include a one-way drive aisle, to which proposed Driveway 5 would be the entrance and the proposed Driveway 6 would be the exit. The drive aisle would include a designated drop-off area and access to surface parking on the northern edge of the parcel; no other vehicular circulation would be provided on the southern parcel.

Finding – Site access and circulation are expected to operate acceptably.

Sight Distance

At driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along SR 29 and Lodi Lane at the main driveways (2 and 3 as shown in Figure 5) were evaluated based on sight distance criteria contained in the *Highway Design Manual* (HDM) published by Caltrans. The recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Setback for the driver on the crossroad should be a minimum of 15 feet, measured from the edge of the traveled way.

For the posted 50-mph speed limit on SR 29, the recommended stopping sight distance is 430 feet. Based on a review of field conditions, sight distance at Driveway 2 extends more than 500 feet to the south and approximately 440 feet to the north to Byrd Hill Road. Because sight distance to the north is close to the recommended amount, radar speed samples were obtained in the southbound direction on SR 29 to determine if the available sight distance is adequate for actual travel speeds. Based on radar samples, the 85th percentile speed in the southbound direction is 49 mph, so the available sight distance is adequate for actual approach speeds. The speed survey data is included in Appendix F.

For the posted 40-mph speed limit on Lodi Lane, the recommended sight distance is 300 feet. Based on a review of field conditions, sight distance at Driveway 3 extends approximately 350 feet to the east, which is adequate for the posted speed limit, but is limited due to the presence of tall grass along the project frontage. To the west, sight distance was measured with respect to the proximity of the driveway to SR 29. Because of its position, sight distance must extend onto SR 29 to avoid potential conflicts with drivers pulling out of the driveway and drivers turning onto Lodi Lane from SR 29. Based on a review of field conditions, sight distance extends approximately 200 feet on SR 29 to the south and approximately 150 feet to the north, which would be adequate for speeds of 30 and 25 mph, respectively. Oncoming traffic would be navigating a turn and would be expected to travel well below 25 mph.

Finding – Adequate sight distance is available in each direction along SR 29 and Lodi Lane to accommodate all turns, though landscaping could affect sight lines.

Recommendation – To ensure that sight lines remain adequate, any landscaping along the street frontages should be planted and maintained such that it is less than three feet or more than seven feet in height to maximize clear sight lines.

Emergency Access

As proposed in the site plan, all drive aisles meet County design standards and the driveways would be of enough width to accommodate emergency response vehicles.

Finding – Emergency access is adequate.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lane on SR 29 at Driveway 2 was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes to determine the need for a left-turn pocket based on safety issues. Based on our research and discussions with Caltrans staff, this methodology is consistent with the "Guidelines for Reconstruction of Intersections," August 1985, which was referenced in Section 405.2, Left-turn Channelization, of previous editions of the Caltrans HDM, though this reference has been deleted from the most recent edition of this manual.

The need for left-turn channelization in the form of a left-turn pocket was evaluated for Existing and Future Conditions without, and with, the proposed project during both peak hours. A left-turn lane would not be warranted during either of the peak hours under Existing volumes without or with the project; however, due to the large growth anticipated on SR 29, a left-turn lane would be warranted during both peak hours without or with the proposed project based on Future volumes. The required turn-lane dimensions based on Chapter 400 of the HDM are included in Appendix G.

Finding – Based on the anticipated Future volumes during weekday evening and weekend midday peak hours, a left-turn lane would be warranted on SR 29 at Driveway 2 without or with the proposed project.

Recommendation Because the site has multiple access points, rather than constructing a left-turn lane that meets current Caltrans highway design standards it is recommended that left-turns be prohibited at Driveway 2. The applicant should install signage in the southbound direction that reads "Freemark Abbey Winery and Resort Use Lodi Lane" or something similar to be reviewed and approved by County and Caltrans staff before installation. Additionally, a mini "pork-chop" island should be installed at Driveway 2 to restrict access to right-turn movements only at this location.

Right-Turn Lane Warrants

The need for a right-turn lane or taper at Driveway 2 was also evaluated and would consist of a lane installed to the right of the travel lane and would be a minimum of ten feet wide, plus a shoulder where not adjacent to a curb. A right-turn taper is a shoulder area that gets progressively wider as the motorist drives toward the intersection. Both improvements are meant to provide an area for motorists turning right to move out of the traffic lane without impeding through traffic.

The need for a right-turn lane or taper on SR 29 at Driveway 2 was evaluated using Existing and Future volumes both with and without the project. Based on these scenarios, no additional facilities in the form of either a right-turn lane or right-turn taper would be warranted during either of the peak hours. The turn lane analysis sheets are contained in Appendix G.

Finding – Neither a right-turn lane nor right-turn taper would be warranted at Driveway 2 on SR 29.

Transportation Demand Management

Transportation Demand Management (TDM) measures aim to reduce single-occupancy vehicle trips, parking demand, and total vehicle miles traveled (VMT) through use of alternative modes of transportation and more efficiently planned trips. Although VMT analysis is not required as part of the California Environmental Quality Act (CEQA) review process until July 2020, in recognition of the statewide goal to reduce VMT the applicant has included numerous TDM measures as part of the project. Due to the project's rural location, the site does not have as many options to reduce VMT as one located in an urban environment, but the site is accessible via bicycle and transit and would employ a relatively large number of people so there is potential to reduce vehicular trips and parking demand with implementation of a TDM program.

Proposed TDM Program

The project's TDM Program would provide information, encouragement, and access to non-motorized travel options to reduce the number of vehicle trips, shifting these trips to other modes and thus reducing VMT. The following measures are proposed as part of the project and are consistent with the goals of Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*. It is recommended that the incentives offered as part of the program be available for the first two years of operation, after which the effectiveness of the program should be reevaluated and modified, if needed.

- **Carpool Incentives:** The project site would have up to 112 employees on-site across all uses at peak times so there is a substantial opportunity for employees to carpool to work, especially considering that the winery, tasting room, hotel, and restaurant would require numerous employees to work the same shift. Financial incentives can be an effective way to encourage employees to carpool to work. The applicant would provide an incentive of $50 per month to employees who agree to carpool to work a minimum of 75 percent of the time. This program would be offered to the existing employees as well as new employees of the hotel.

- **Preferred Parking:** Providing dedicated parking stalls for those employees that carpool to work can be an effective incentive to encourage employees to carpool. As part of the program, the applicant would reserve five parking spaces immediately adjacent to the wine production building for use by carpool vehicles only.

- **Guaranteed Ride Home:** One of the reasons that many employees do not carpool to work is the fear of being stranded should they need to leave in an emergency. Employees who carpool to work should be guaranteed a ride home in the case of an emergency or unique situation. As part of the V-Commute program offered by the Napa Valley Transportation Authority (NVTA), employees who carpool or commute via alternative modes are be able to use a taxi, rental car, Lyft, Uber, or other means to get home in an emergency and are reimbursed for the full cost of the service. The program is available to all who work or attend college in Napa County and is free to join, but registration is required. As part of the project's TDM program, employees would be provided information about V-Commute and would be encouraged to register for the service.

- **Subsidized Transit Passes:** The project site is conveniently located next to two Vine Transit stops on SR 29 and is therefore accessible via transit. Employees wishing to use transit to reach the site would be provided a monthly pass for Vine Transit free of charge.

- **Bicycle Trip-end Facilities:** The proposed project includes long-term covered bicycle storage for six bicycles and an additional 12 normal spaces to accommodate a total of 18 bicycles, which exceeds County requirements. Showers and changing rooms would be provided on-site to further encourage employees to ride their bicycles to and from work.

VMT Reduction

Based on the California Air Pollution Officers Association (CAPCOA) report *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA 2010, it is estimated that the inclusion of voluntary commute trip reduction measures with incentives to carpool can reduce a project's total VMT by approximately 1.0 to 6.2 percent. CAPCOA also estimates that the anticipated range of effectiveness for implementation of a subsidized transit program is a VMT reduction of anywhere between 0.3 and 20.0 percent. According to the CAPCOA report, the provision of long-term bicycle storage has a minimal effect on trip generation but supports the greater trip reduction program by providing opportunities for non-motorized travel. The report does not address VMT reduction associated with connectivity to a Class I regional trail, but because the project site would be located on the Vine Trail, it is reasonable to expect some reduction in VMT due to employees and guests accessing the site via bicycle, especially when combined with the on-site trip-end bicycle facilities proposed.

Parking

Because the County of Napa does not specify parking rates for wineries or tasting rooms, the project was analyzed to determine whether the proposed parking supply would be sufficient based on the anticipated peak parking demand. The project site, as proposed, would provide a total of 198 parking spaces via a combination of self and valet parking; self-parking would be provided in multiple surface lots and valet parking would occur in an underground parking garage.

Parking demand for new developments is typically projected using empirically-derived rates established by agencies or organizations; these standardized, single-use parking demand rates do not consider the potential for "shared parking" and assume that each separate use located on the same site must provide its own contained parking supply. The concept of shared parking is based on the fact that different land uses often experience peak parking demand at different times, be it by time of day or even month of the year and is particularly applicable to the proposed project as it includes multiple components that would experience their respective peak demands at different times. Without taking shared parking demand into consideration, an oversupply of parking could result in expanses of empty asphalt on the project site.

Shared Parking Demand

A parking demand methodology that considers "shared parking" principles can significantly improve the accuracy of determining actual parking demand. The Urban Land Institute (ULI) publication *Shared Parking*, 2nd Edition, 2005, includes state-of-the-practice methodologies for determining parking demand based on the various components of a specific project. The ULI shared parking methodology focuses on temporal data, determining when the overall peak demand for various land uses occurs, including what time of day, whether it is a weekday or weekend, and what month of the year. The recommended parking supply is then tied to that maximum demand period. The ULI model considers the proposed mix of land uses, including quantities of each type of use.

Initial analysis determined that for the proposed project the peak parking demand for the site as a whole would be anticipated to occur midday on a weekend during the months of July and August. This time period reflects conditions when check-out and check-in would be occurring at the hotel, the restaurant would be open for lunch, the winery would be operating, and the tasting room and retail operations would be busiest. Additionally, it would be possible for a special event to be occurring during this time period which would further increase demand.

To determine the maximum demand for the hotel and restaurant uses the ULI *Shared Parking Model* was used, which, in addition to temporal demand, considers mode adjustment and non-captive ratios. Mode adjustment is the estimated number of employees and visitors who will access the site using a mode of transportation other than a private automobile, such as biking, walking, and transit. The model can also apply a non-captive ratio, which is the number of people who will travel from outside the site to the various land uses. Since this is a mixed-use project, it is reasonable to assume that some parking demand may be reduced as patrons park once and then visit multiple land uses. For example, a hotel guest may visit the winery and eat at the restaurant, which would not require an additional parking space for each subsequent land use beyond the first one. The model starts by assuming that 100 percent of people accessing the site will travel by a private automobile and are traveling from outside the site; deductions are then applied based on commuting behaviors, land uses, and regional knowledge of the area being studied.

For employees of the hotel, restaurant, café, and retail uses, mode adjustments were determined based on the US Census 2014 American Community Survey (ACS) using commuting to work patterns for Census Tract 2015, which is the census tract in which the project site is located. This data showed that approximately 86 percent of residents living in Census Tract 2015 drive alone to and from work. Approximately 14 percent of resident's commute via other means such as walking, bicycling, carpooling, transit, etc. The mode adjustment was therefore reduced by

14 percent, which equates to a mode adjustment of 86 percent. Similarly, because many patrons of the restaurant are anticipated to be hotel guests, it was assumed that 30 percent of the restaurant patrons would come from within the project site; the other 70 percent would travel to the site for the sole purpose of visiting the restaurant. Based on these assumptions, the ULI model anticipates a parking demand of 113 total spaces between the restaurant, hotel, retail, and cafe on a weekend in July and/or August from 12:00 noon to 1:00 p.m. A summary of the ULI estimated shared parking demand by time of day is included in Appendix H.

The parking demand for the other uses on-site were developed based on site-specific characteristics, as the ULI model does not have data that can be used to analyze wineries, tasting rooms, or special events. To determine the demand generated by the tasting room, it was assumed that 2.8 persons would occupy each vehicle on average and that 57 percent of the total daily visitors would be on-site during the peak hour; both assumptions are consistent with the County of Napa Winery Traffic Information/Trip Generation Sheet. Further, it was assumed that 30 percent of the tasting room guests would be generated from the hotel or restaurant and would not require an additional parking space. To determine the demand generated by a 100-person event, the County's standard event occupancy rate of three persons per vehicle was used. Lastly, it was assumed that 0.86 parking spaces would be needed per employee, as mentioned above relative to the data for Census Tract 2015 that indicates that approximately 86 percent of employees drive alone to work.

Based on these assumptions and the anticipated operational parameters for each specific use provided by the project applicant, the site would need to provide a total of 196 parking spaces to accommodate the peak demand, which would occur on weekends in July and August from approximately 12:00 noon to 1:00 p.m. A summary of the parking analysis is included in Table 12.

Table 12 – Peak Demand Parking Analysis

Land Use	Units	Employee Demand	Guest Demand	Total Demand
Hotel	79 rooms, 32 empl	28	29	57
Restaurant	6,500 sf, 30 empl	26	25	51
Café and Retail	1,935 sf, 2 empl	2	3	5
Winery and Tasting Room	54 daily guests, 25 empl	22	8	30
Maintenance, Valet Parking, & Spa Empl	14 empl	12	-	12
Special Event	100 guests, *9 empl	8	33	41
Total Peak Demand		*98*	*98*	*196*
Proposed Parking Supply				**198**

Notes: empl = employee; sf = square feet; *Events would require a total of 22 employees, 13 of which would already be on-site for their regular shift

Finding – Based on shared parking concepts, the proposed parking supply of 198 spaces would be adequate to meet the peak demand of 196 spaces.

Conclusions and Recommendations

Conclusions

- The proposed project is expected to generate an average of 645 new daily vehicle trips, including 33 trips during the weekday evening peak hour and 57 trips during the weekend midday peak hour. When added to the existing trips, the site would still generate 575 less daily trips on average than if all the permitted uses were operational, including 93 fewer trips during the weekday p.m. peak hour and 150 fewer trips during the weekend midday peak hour.

- The study intersections of Lodi Lane with SR 29 and Silverado Trail are currently operating acceptably at LOS A overall during both peak hours. Upon the addition of project-related traffic to the Existing volumes, the study intersections would continue operating at the same levels of service during both peak hours.

- Upon the addition of project-related traffic to Future volumes, the intersection of Silverado Trail/Lodi Lane would be expected to operate acceptably during both peak hours based on County standards. The impact of adding project-generated traffic would therefore be *less-than-significant*.

- Under Future Conditions, SR 29/Lodi Lane would be expected to operate acceptably overall during both peak hours based on Caltrans standards; however, the Lodi Lane approach would operate at LOS E which would be considered unacceptable based on County standards. The project would be responsible for more than ten percent of the anticipated growth on the Lodi Lane approach by the year 2030 so the project's impact would be considered *significant*. Striping to provide separate left- and right-turn lanes on the Lodi Lane approach to SR 29 would reduce the project's impacts under Future Conditions to *less-than-significant*.

- Volumes would not meet peak hour signal warrants at SR 29/Lodi Lane or Silverado Trail/Lodi Lane under Existing or Future Conditions, without or with the project.

- The existing storage length in the southbound left-turn lane on SR 29 at Lodi Lane is adequate to accommodate the proposed project under all evaluated scenarios. There would be adequate space for stacking to occur on Lodi Lane at Driveway 3 without spilling into SR 29.

- Pedestrian, bicycle, and transit facilities are adequate to serve the anticipated demand.

- As proposed in the project site plan, site access and circulation are expected to operate acceptably for both passenger and emergency response vehicles.

- Adequate sight distance is available in each direction along SR 29 and Lodi Lane to accommodate all turns into and out of site driveways.

- Neither a right-turn lane nor right-turn taper would be warranted at Driveway 2 on SR 29. A left-turn lane would be warranted with or without the proposed project under the anticipated Future volumes; however, would not be necessary if left turns are prohibited at this location.

- Based on shared parking concepts, the proposed parking supply of 198 spaces would be adequate for the peak demand of 196 spaces.

Recommendations

- To mitigate the project's impact on the Lodi Lane approach to SR 29 under Future Conditions, it is recommended that the project restripe the approach to provide a dedicated right-turn lane. This improvement would reduce the delay on the Lodi Lane approach to less than the delay expected under Future Conditions without the project.

- The applicant should install signage or other appropriate measures in the southbound direction on SR 29 that prohibits left-turns at Driveway 2. All southbound left-turns into the site should occur via the existing left-turn lane at Lodi Lane. Additionally, the applicant should construct a mini pork-chop island or other similar features to delineate that only right-turns are allowed at Driveway 2.

- The applicant should be responsible for installing a speed feedback sign on Silverado Trail in the northbound direction between the driveway to Melka Estates Winery and the horizontal curve. The exact location of the sign should be coordinated with County staff.

- The applicant should continue to work with NVVTC and NVTA to ensure that sufficient right-of-way is being dedicated for the planned bicycle facilities along the project frontage. If the facilities are not constructed before the hotel project, the applicant should consider constructing the facilities as part of the project in exchange for traffic impact fee credits.

- As part of the project, a shelter and bench should be installed at the northbound transit stop along the property frontage with SR 29.

- To ensure that existing sight lines remain adequate, any landscaping within the vision triangles at the driveways on SR 29 or Lodi Lane should be planted and maintained such that it is less than three feet or more than seven feet in height to maximize clear sight lines.

- As proposed, the project should implement the TDM measures identified in this report, including carpool incentives, a guaranteed ride home program, subsidized transit passes, and bicycle trip-end facilities.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
Associate Engineer	Cameron Nye, EIT
Graphics	Hannah Yung-Boxdell
Editing/Formatting	Angela McCoy, Alex Scrobonia

References

2014 Collision Data on California State Highways, California Department of Transportation, 2017
American Community Survey, http://www.census.gov/acs/www/
California Manual on Uniform Traffic Control Devices for Streets and Highways, California Department of Transportation, 2014
Guide for the Preparation of Traffic Impact Studies, California Department of Transportation, 2002
Guidelines for Interpretation of General Plan Circulation Policies on Significance Criteria, Fehr & Peers, 2015
Highway Capacity Manual, Transportation Research Board, 2010
Highway Design Manual, 6th Edition, California Department of Transportation, 2012
Intersection Channelization Design Guide, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985
Napa County Code, Municipal Code Corporation, 2017
Napa County General Plan, County of Napa, 2013
Napa County Road and Street Standards, County of Napa, 2016
Napa Countywide Bicycle Plan (February 2019 Draft), Napa Valley Transportation Authority, 2019
NCTPA Countywide Bicycle Plan, Napa County Transportation and Planning Agency, 2012
Quantifying Greenhouse Gas Mitigation Measures, CAPCOA, 2010
Re-validating and Improving Queue Length Models at Two-Way Stop Controlled Intersection, Oregon Department of Transportation, 2013
Shared Parking, 2nd Edition, Urban Land Institute, 2005
Smart Mobility 2010: A Call to Action for the New Decade, California Department of Transportation, 2010
Statewide Integrated Traffic Records System (SWITRS), California Highway Patrol, 2014-2018
The Inn at the Abbey, https://www.innattheabbey.com/vision
Trip Generation Manual, 9th Edition, Institute of Transportation Engineers, 2012
VINE Transit, http://www.ridethevine.com

NAX062

This page intentionally left blank

Appendix A

Winery Traffic Information/Trip Generation Sheet

This page intentionally left blank

Winery Traffic Information / Trip Generation Sheet

Project Name: Inn at the Abbey Project Scenario: Permitted

Traffic during a Typical Weekday

Number of FT employees: 25 x 3.05 one-way trips per employee = 76 daily trips.

Number of PT employees: 0 x 1.90 one-way trips per employee = 0 daily trips.

Average number of weekday visitors: 54 / 2.6 visitors per vehicle x 2 one-way trips = 42 daily trips.

Gallons of production: 60000 / 1,000 x .009 truck trips daily[3] x 2 one-way trips = 1 daily trips.

Total = 119 **daily trips.**

Number of total weekday trips x .38 = 45 **PM peak trips.**

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): 25 x 3.05 one-way trips per employee = 76 daily trips.

Number of PT employees (on Saturdays): 0 x 1.90 one-way trips per employee = 0 daily trips.

Average number of weekend visitors: 54 / 2.8 visitors per vehicle x 2 one-way trips = 39 daily trips.

Total = 115 **daily trips.**

Number of total Saturday trips x .57 = 66 **PM peak trips.**

Traffic during a Crush Saturday

Number of FT employees (during crush): 25 x 3.05 one-way trips per employee = 76 daily trips.

Number of PT employees (during crush): 0 x 1.90 one-way trips per employee = 0 daily trips.

Average number of weekend visitors: 54 / 2.8 visitors per vehicle x 2 one-way trips = 39 daily trips.

Gallons of production: 60000 / 1,000 x .009 truck trips daily x 2 one-way trips = 1 daily trips.

Avg. annual tons of grape on-haul: 500 x .11 truck trips daily [4] x 2 one-way trips = 7 daily trips.

Total = 123 **daily trips.**

Number of total Saturday trips x .57 = 70 **PM peak trips.**

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): 9 x 2 one-way trips per staff person = 18 trips.

Number of visitors (largest event): 100 / 2.8 visitors per vehicle x 2 one-way trips = 71 trips.

Number of special event truck trips (largest event): 0 x 2 one-way trips = 0 trips.

[3] Assumes 1.47 materials & supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year (see *Traffic Information Sheet Addendum* for reference).

[4] Assumes 4 tons per trip / 36 crush days per year (see *Traffic Information Sheet Addendum* for reference).

This page intentionally left blank

Appendix B

Collision Rate Calculations

This page intentionally left blank

Intersection Collision Rate Calculations

Inn at the Abbey

Intersection # 1: SR 29 & Lodi Ln

Date of Count: Tuesday, June 25, 2019

Number of Collisions: 3
Number of Injuries: 2
Number of Fatalities: 0
ADT: 12800
Start Date: January 1, 2014
End Date: December 31, 2018
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{3 \times 1{,}000{,}000}{12{,}800 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.13 c/mve**	**0.0%**	**66.7%**
Statewide Average*	**0.16 c/mve**	**1.7%**	**39.2%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2014 Collision Data on California State Highways, Caltrans

Intersection # 2: Silverado Trail & Lodi Ln

Date of Count: Tuesday, June 25, 2019

Number of Collisions: 5
Number of Injuries: 2
Number of Fatalities: 0
ADT: 6000
Start Date: January 1, 2014
End Date: December 31, 2018
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{5 \times 1{,}000{,}000}{6{,}000 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.46 c/mve**	**0.0%**	**40.0%**
Statewide Average*	**0.16 c/mve**	**1.7%**	**39.2%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2014 Collision Data on California State Highways, Caltrans

SEGMENT COLLISION RATE CALCULATIONS

Inn at the Abbey

Location: SR 29 - York Ln to Ehlers Ln

Date of Count: Tuesday, June 25, 2019
ADT: 15,000

Number of Collisions: 12
Number of Injuries: 5
Number of Fatalities: 0
Start Date: January 1, 2014
End Date: December 31, 2018
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: ≤55
Terrain: Rolling/Mountain

Segment Length: 0.8 miles
Direction: North/South

$$\frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Segment Length x Number of Years}}$$

$$\frac{12 \times 1{,}000{,}000}{15{,}000 \times 365 \times 0.8 \times 5}$$

	Collision Rate		Fatality Rate	Injury Rate
Study Segment	**0.55**	**c/mvm**	**0.0%**	**41.7%**
Statewide Average*	**1.16**	**c/mvm**	**2.2%**	**44.8%**

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2014 Collision Data on California State Highways, Caltrans

Location: Lodi Ln - SR 29 to Silverado Trail

Date of Count: Tuesday, June 25, 2019
ADT: 1,000

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
Start Date: January 1, 2014
End Date: December 31, 2018
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: ≤55
Terrain: Flat

Segment Length: 0.5 miles
Direction: East/West

$$\frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Segment Length x Number of Years}}$$

$$\frac{0 \times 1{,}000{,}000}{1{,}000 \times 365 \times 0.5 \times 5}$$

	Collision Rate		Fatality Rate	Injury Rate
Study Segment	**0.00**	**c/mvm**	**0.0%**	**0.0%**
Statewide Average*	**1.16**	**c/mvm**	**2.4%**	**40.1%**

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2014 Collision Data on California State Highways, Caltrans

SEGMENT COLLISION RATE CALCULATIONS

Inn at the Abbey

Location: Silverado Trail - Bournemouth Rd to Glass Mountain Rd
Date of Count: Tuesday, June 25, 2019
ADT: 5,600

Number of Collisions: 15
Number of Injuries: 3
Number of Fatalities: 0
Start Date: January 1, 2014
End Date: December 31, 2018
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: ≤55
Terrain: Rolling/Mountain

Segment Length: 0.7 miles
Direction: North/South

$$\frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Segment Length x Number of Years}}$$

$$\frac{15 \times 1{,}000{,}000}{5{,}600 \times 365 \times 0.7 \times 5}$$

	Collision Rate		Fatality Rate	Injury Rate
Study Segment	**2.10**	**c/mvm**	**0.0%**	**20.0%**
Statewide Average*	**1.20**	**c/mvm**	**2.2%**	**44.8%**

ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2014 Collision Data on California State Highways, Caltrans

This page intentionally left blank

Appendix C

Traffic Count Data, Existing Driveway Volumes, Heavy Vehicle Data, Future Volumes Projections

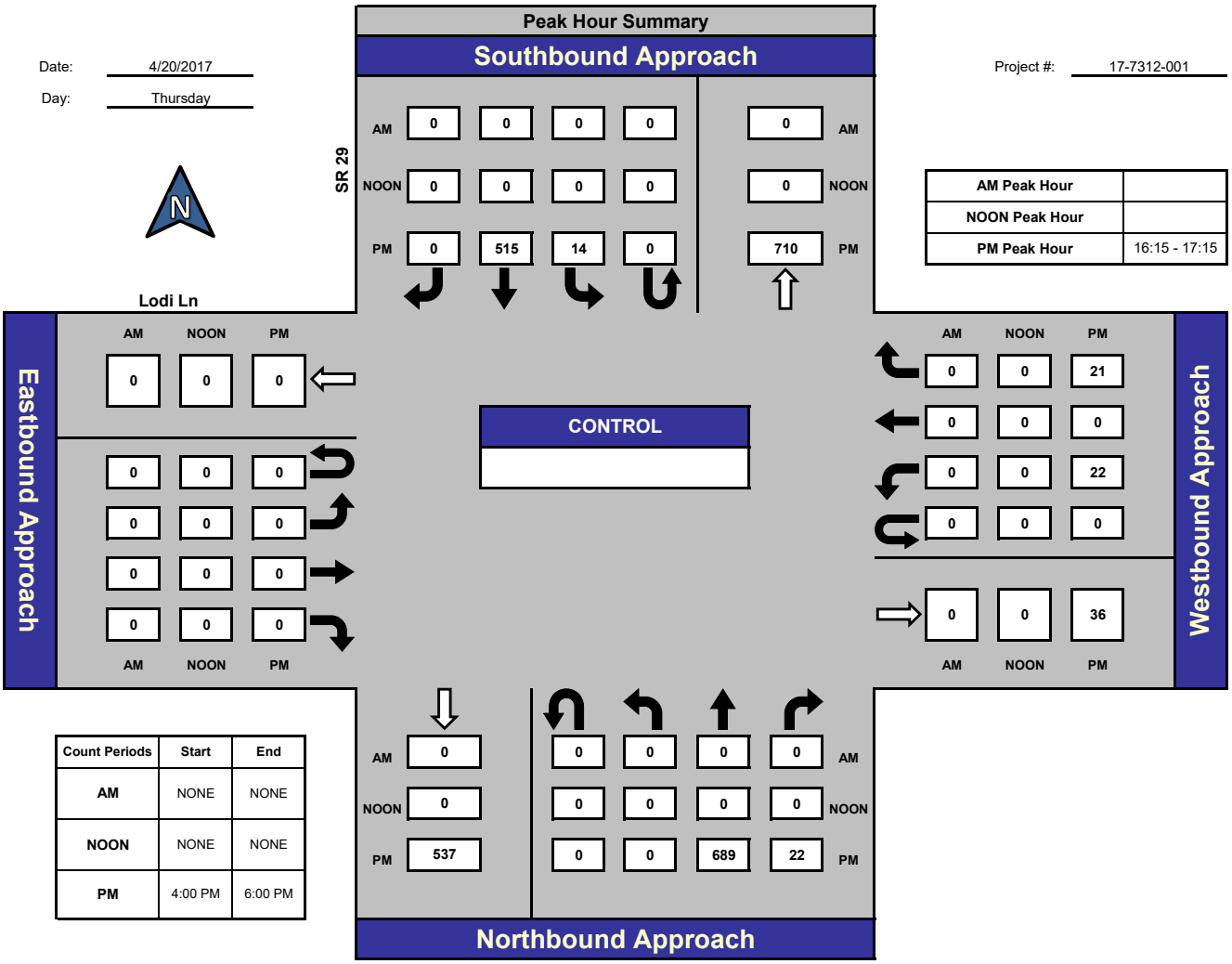
This page intentionally left blank

SR 29 & Lodi Ln

Date: 4/20/2017

Day: Thursday

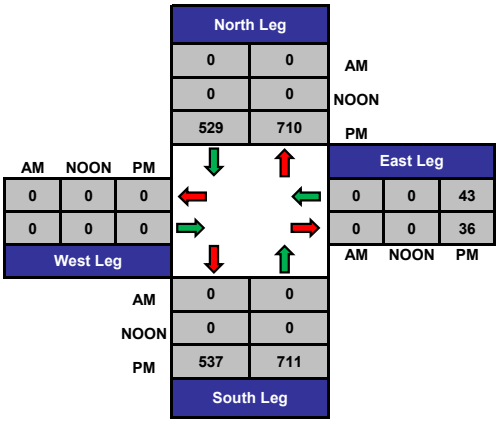
Project #: 17-7312-001



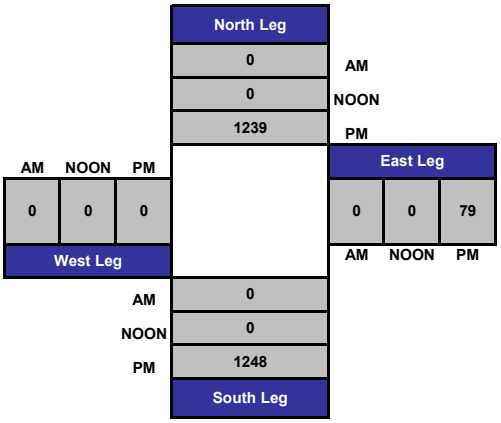
AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	16:15 - 17:15

Count Periods	Start	End
AM	NONE	NONE
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg

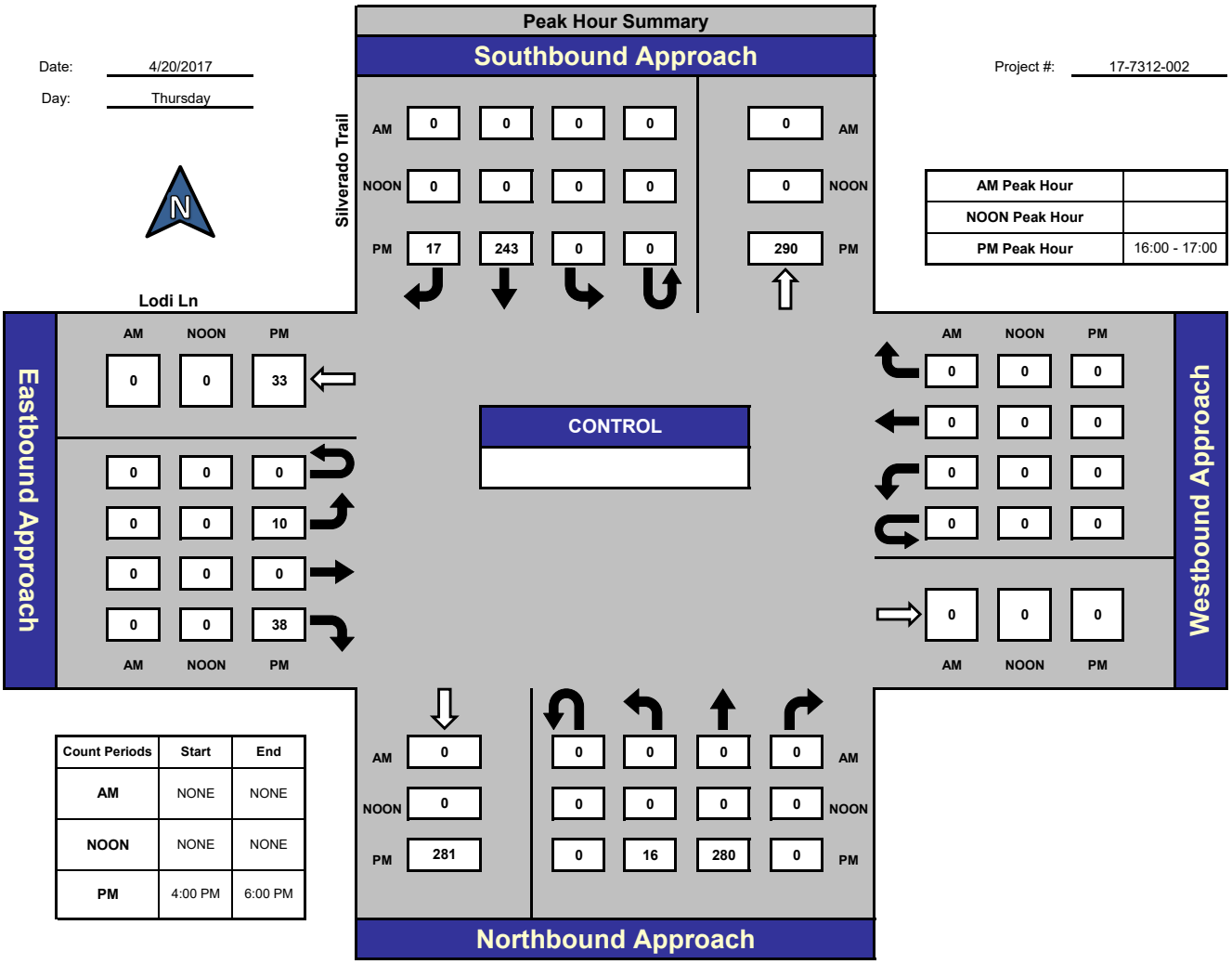


Silverado Trail & Lodi Ln

Date: 4/20/2017

Day: Thursday

Project #: 17-7312-002



AM Peak Hour	
NOON Peak Hour	
PM Peak Hour	16:00 - 17:00

Count Periods	Start	End
AM	NONE	NONE
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	260	290	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
0	0	33		0	0	0	
0	0	48		0	0	0	

	South Leg	
AM	0	0
NOON	0	0
PM	281	296

Total Volume Per Leg

	North Leg	
	0	AM
	0	NOON
	550	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	0	81	0	0	0

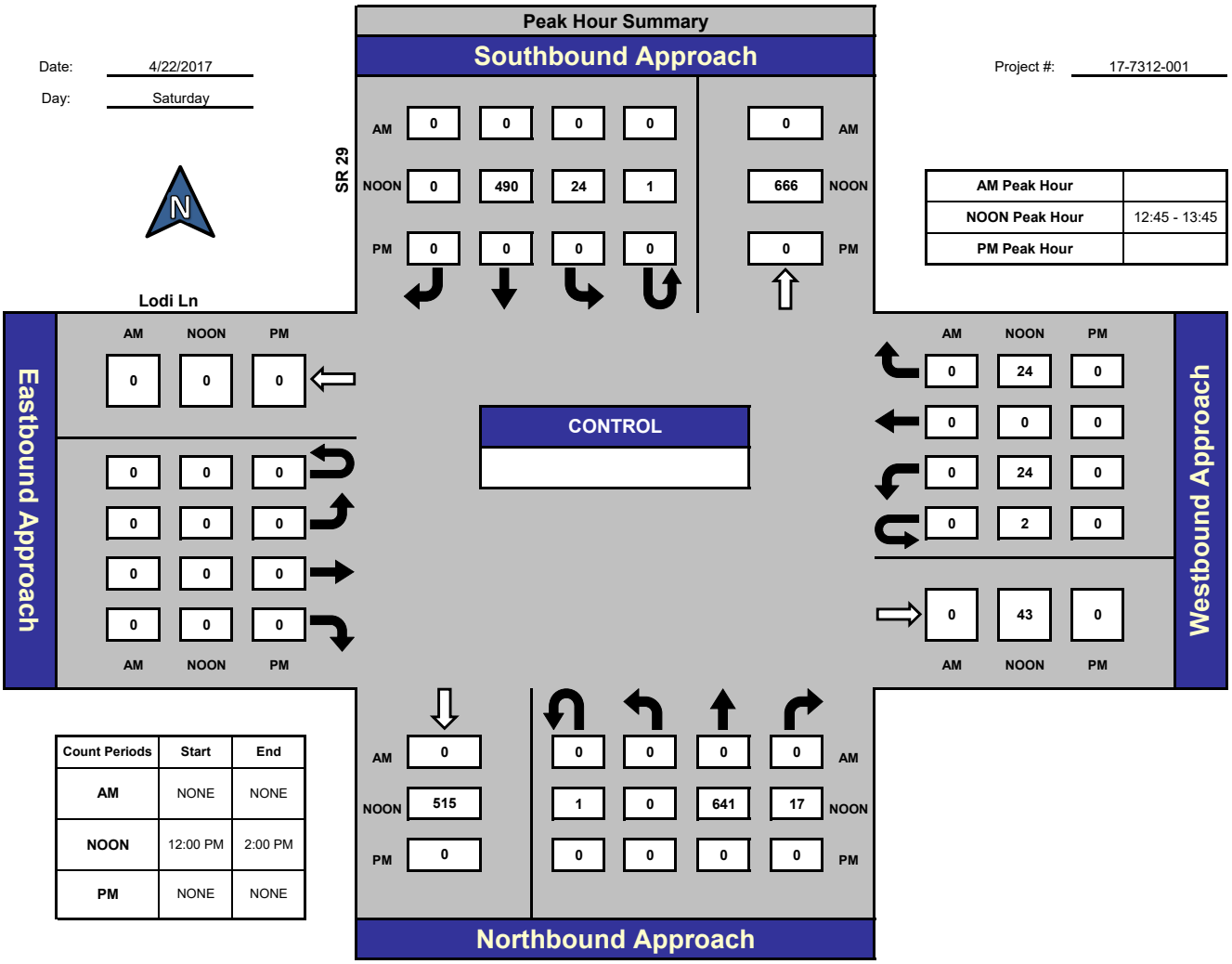
	South Leg
AM	0
NOON	0
PM	577

SR 29 & Lodi Ln

Date: 4/22/2017

Day: Saturday

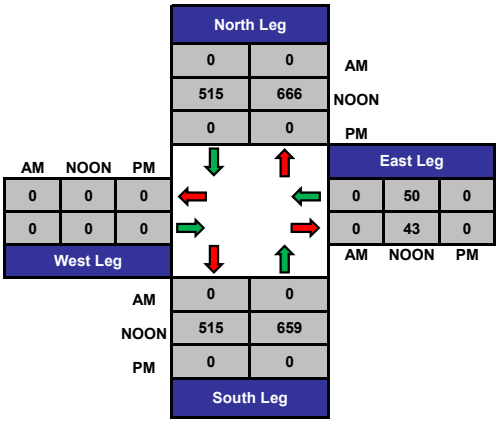
Project #: 17-7312-001



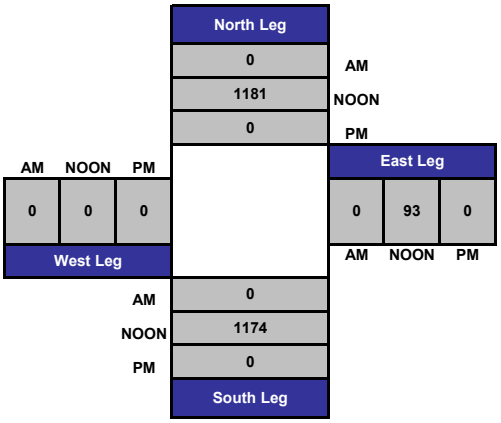
AM Peak Hour	
NOON Peak Hour	12:45 - 13:45
PM Peak Hour	

Count Periods	Start	End
AM	NONE	NONE
NOON	12:00 PM	2:00 PM
PM	NONE	NONE

Total Ins & Outs



Total Volume Per Leg

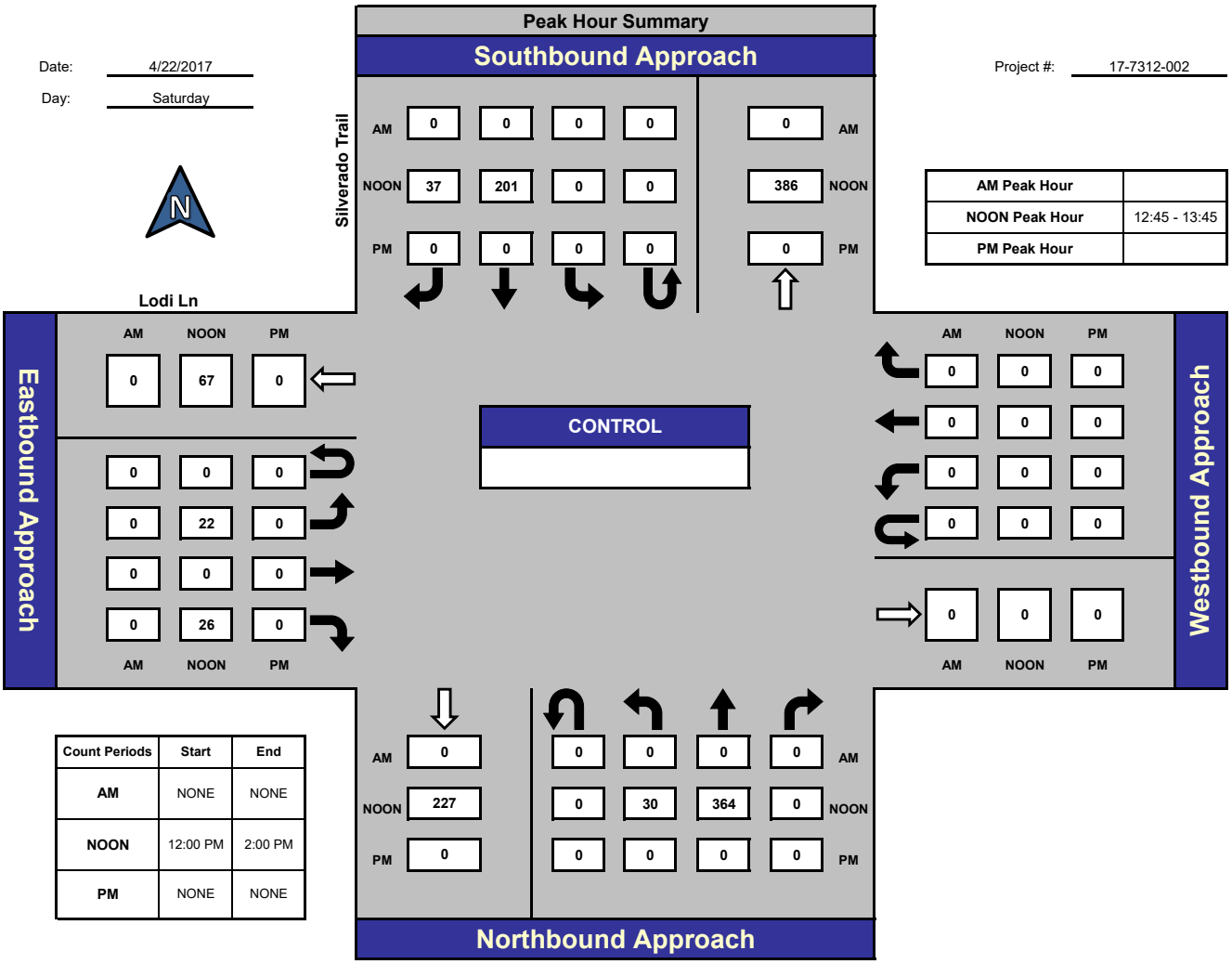


Silverado Trail & Lodi Ln

Date: 4/22/2017

Day: Saturday

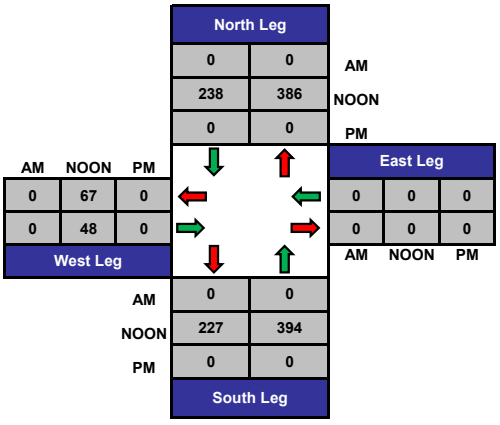
Project #: 17-7312-002



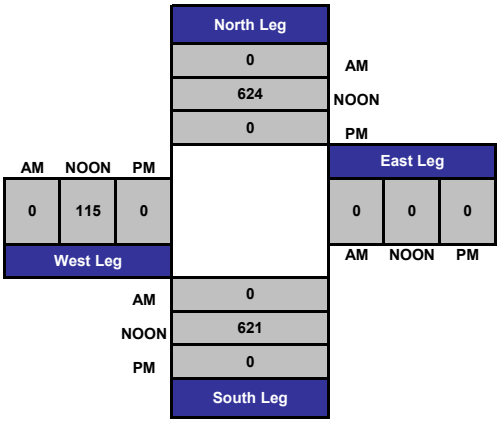
AM Peak Hour	
NOON Peak Hour	12:45 - 13:45
PM Peak Hour	

Count Periods	Start	End
AM	NONE	NONE
NOON	12:00 PM	2:00 PM
PM	NONE	NONE

Total Ins & Outs



Total Volume Per Leg



Prepared by NDS/ATD

VOLUME

SR 29 N/O Lodi Ln

Day: Thursday
Date: 4/20/2017

City: St Helena
Project #: CA17_7313_001

DAILY TOTALS	NB	SB	EB	WB	Total
	7,731	7,523	0	0	15,254

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	5		4				9		12:00	155		106				261	
00:15	7		5				12		12:15	130		114				244	
00:30	5		6				11		12:30	141		117				258	
00:45	5	22	4	19			9	41	12:45	134	560	121	458			255	1018
01:00	4		4				8		13:00	140		131				271	
01:15	4		5				9		13:15	131		135				266	
01:30	2		8				10		13:30	123		130				253	
01:45	1	11	5	22			6	33	13:45	137	531	142	538			279	1069
02:00	2		5				7		14:00	155		122				277	
02:15	5		2				7		14:15	145		131				276	
02:30	4		1				5		14:30	153		138				291	
02:45	4	15	5	13			9	28	14:45	139	592	121	512			260	1104
03:00	3		4				7		15:00	176		132				308	
03:15	5		5				10		15:15	187		133				320	
03:30	3		8				11		15:30	163		186				349	
03:45	9	20	3	20			12	40	15:45	175	701	181	632			356	1333
04:00	6		5				11		16:00	168		141				309	
04:15	7		13				20		16:15	179		140				319	
04:30	13		10				23		16:30	176		128				304	
04:45	21	47	19	47			40	94	16:45	180	703	137	546			317	1249
05:00	20		26				46		17:00	179		131				310	
05:15	20		26				46		17:15	202		101				303	
05:30	32		46				78		17:30	183		120				303	
05:45	35	107	86	184			121	291	17:45	159	723	101	453			260	1176
06:00	62		104				166		18:00	118		116				234	
06:15	80		119				199		18:15	107		94				201	
06:30	88		139				227		18:30	94		99				193	
06:45	85	315	174	536			259	851	18:45	87	406	92	401			179	807
07:00	76		105				181		19:00	72		67				139	
07:15	101		128				229		19:15	57		71				128	
07:30	77		159				236		19:30	80		53				133	
07:45	88	342	133	525			221	867	19:45	53	262	60	251			113	513
08:00	101		134				235		20:00	59		71				130	
08:15	97		156				253		20:15	64		56				120	
08:30	100		144				244		20:30	43		50				93	
08:45	122	420	124	558			246	978	20:45	47	213	31	208			78	421
09:00	111		128				239		21:00	40		47				87	
09:15	120		121				241		21:15	43		35				78	
09:30	106		114				220		21:30	27		26				53	
09:45	117	454	141	504			258	958	21:45	32	142	26	134			58	276
10:00	110		108				218		22:00	25		23				48	
10:15	123		99				222		22:15	39		23				62	
10:30	105		96				201		22:30	27		17				44	
10:45	137	475	127	430			264	905	22:45	14	105	18	81			32	186
11:00	124		112				236		23:00	24		12				36	
11:15	127		101				228		23:15	21		14				35	
11:30	101		97				198		23:30	18		10				28	
11:45	137	489	92	402			229	891	23:45	13	76	13	49			26	125
TOTALS		2717		3260				5977	TOTALS		5014		4263				9277
SPLIT %		45.5%		54.5%				39.2%	SPLIT %		54.0%		46.0%				60.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,731	7,523	0	0	15,254

AM Peak Hour	11:45	07:30				11:45	PM Peak Hour	16:45	15:30				15:15
AM Pk Volume	563	582				992	PM Pk Volume	744	648				1334
Pk Hr Factor	0.908	0.915				0.950	Pk Hr Factor	0.921	0.871				0.937
7 - 9 Volume	762	1083	0	0		1845	4 - 6 Volume	1426	999	0	0		2425
7 - 9 Peak Hour	08:00	07:30				08:00	4 - 6 Peak Hour	16:45	16:00				16:15
7 - 9 Pk Volume	420	582	0	0		978	4 - 6 Pk Volume	744	546	0	0		1250
Pk Hr Factor	0.861	0.915	0.000	0.000		0.966	Pk Hr Factor	0.921	0.968	0.000	0.000		0.980

Prepared by NDS/ATD

VOLUME

SR 29 N/O Lodi Ln

Day: Friday
Date: 4/21/2017

City: St Helena
Project #: CA17_7313_001

DAILY TOTALS	NB	SB	EB	WB	Total
	8,130	7,814	0	0	15,944

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	9		12				21		12:00	126		122				248	
00:15	8		5				13		12:15	150		138				288	
00:30	7		4				11		12:30	138		124				262	
00:45	11	35	3	24			14	59	12:45	156	570	107	491			263	1061
01:00	6		5				11		13:00	143		164				307	
01:15	1		2				3		13:15	157		116				273	
01:30	5		2				7		13:30	134		129				263	
01:45	2	14	5	14			7	28	13:45	151	585	142	551			293	1136
02:00	2		3				5		14:00	139		124				263	
02:15	4		2				6		14:15	161		135				296	
02:30	7		2				9		14:30	163		123				286	
02:45	4	17	5	12			9	29	14:45	190	653	147	529			337	1182
03:00	3		7				10		15:00	180		160				340	
03:15	3		3				6		15:15	173		129				302	
03:30	7		9				16		15:30	177		158				335	
03:45	5	18	7	26			12	44	15:45	177	707	144	591			321	1298
04:00	9		6				15		16:00	178		154				332	
04:15	8		7				15		16:15	172		154				326	
04:30	16		11				27		16:30	185		149				334	
04:45	26	59	19	43			45	102	16:45	175	710	151	608			326	1318
05:00	14		31				45		17:00	191		135				326	
05:15	20		34				54		17:15	190		132				322	
05:30	28		53				81		17:30	165		141				306	
05:45	34	96	100	218			134	314	17:45	163	709	126	534			289	1243
06:00	50		113				163		18:00	121		114				235	
06:15	77		118				195		18:15	129		109				238	
06:30	89		166				255		18:30	81		66				147	
06:45	70	286	128	525			198	811	18:45	96	427	93	382			189	809
07:00	73		111				184		19:00	83		70				153	
07:15	82		100				182		19:15	75		68				143	
07:30	100		143				243		19:30	72		63				135	
07:45	75	330	154	508			229	838	19:45	56	286	47	248			103	534
08:00	106		137				243		20:00	58		69				127	
08:15	91		135				226		20:15	52		52				104	
08:30	90		131				221		20:30	86		39				125	
08:45	110	397	153	556			263	953	20:45	56	252	45	205			101	457
09:00	115		133				248		21:00	61		43				104	
09:15	115		137				252		21:15	52		37				89	
09:30	121		105				226		21:30	41		27				68	
09:45	120	471	130	505			250	976	21:45	41	195	45	152			86	347
10:00	132		99				231		22:00	40		41				81	
10:15	140		107				247		22:15	39		32				71	
10:30	129		112				241		22:30	27		26				53	
10:45	127	528	104	422			231	950	22:45	35	141	24	123			59	264
11:00	141		105				246		23:00	34		20				54	
11:15	133		130				263		23:15	29		15				44	
11:30	134		104				238		23:30	24		16				40	
11:45	128	536	145	484			273	1020	23:45	21	108	12	63			33	171
TOTALS		2787		3337				**6124**	**TOTALS**		5343		4477				**9820**
SPLIT %		45.5%		54.5%				**38.4%**	**SPLIT %**		54.4%		45.6%				**61.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,130	7,814	0	0	15,944

AM Peak Hour	11:45	07:30				**11:45**	**PM Peak Hour**	16:30	15:30				**16:00**
AM Pk Volume	542	569				**1071**	**PM Pk Volume**	741	610				**1318**
Pk Hr Factor	0.903	0.924				**0.930**	**Pk Hr Factor**	0.970	0.965				**0.987**
7 - 9 Volume	727	1064	0	0		**1791**	**4 - 6 Volume**	1419	1142	0	0		**2561**
7 - 9 Peak Hour	08:00	07:30				**08:00**	**4 - 6 Peak Hour**	16:30	16:00				**16:00**
7 - 9 Pk Volume	397	569	0	0		**953**	**4 - 6 Pk Volume**	741	608	0	0		**1318**
Pk Hr Factor	0.902	0.924	0.000	0.000		**0.906**	**Pk Hr Factor**	0.970	0.987	0.000	0.000		**0.987**

Prepared by NDS/ATD

VOLUME

SR 29 N/O Lodi Ln

Day: Saturday
Date: 4/22/2017

City: St Helena
Project #: CA17_7313_001

DAILY TOTALS	NB	SB	EB	WB	Total
	7,308	7,172	0	0	14,480

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	17		17				34		12:00	160		125				285	
00:15	8		10				18		12:15	156		136				292	
00:30	5		11				16		12:30	142		118				260	
00:45	10	40	8	46			18	86	12:45	153	611	138	517			291	1128
01:00	10		15				25		13:00	177		129				306	
01:15	7		8				15		13:15	168		97				265	
01:30	4		9				13		13:30	170		149				319	
01:45	3	24	13	45			16	69	13:45	146	661	143	518			289	1179
02:00	8		5				13		14:00	177		144				321	
02:15	1		8				9		14:15	144		141				285	
02:30	6		6				12		14:30	171		168				339	
02:45	4	19	3	22			7	41	14:45	175	667	122	575			297	1242
03:00	4		5				9		15:00	159		181				340	
03:15	3		2				5		15:15	178		160				338	
03:30	5		6				11		15:30	166		187				353	
03:45	3	15	7	20			10	35	15:45	168	671	201	729			369	1400
04:00	8		8				16		16:00	160		191				351	
04:15	5		3				8		16:15	143		136				279	
04:30	6		5				11		16:30	124		168				292	
04:45	9	28	14	30			23	58	16:45	142	569	139	634			281	1203
05:00	11		9				20		17:00	134		156				290	
05:15	15		24				39		17:15	135		156				291	
05:30	19		23				42		17:30	106		135				241	
05:45	26	71	64	120			90	191	17:45	125	500	133	580			258	1080
06:00	40		72				112		18:00	111		127				238	
06:15	43		51				94		18:15	108		105				213	
06:30	36		63				99		18:30	73		93				166	
06:45	64	183	49	235			113	418	18:45	62	354	88	413			150	767
07:00	53		41				94		19:00	65		83				148	
07:15	49		58				107		19:15	53		64				117	
07:30	50		71				121		19:30	55		71				126	
07:45	58	210	67	237			125	447	19:45	55	228	69	287			124	515
08:00	61		58				119		20:00	48		47				95	
08:15	66		54				120		20:15	61		77				138	
08:30	75		69				144		20:30	42		64				106	
08:45	95	297	79	260			174	557	20:45	49	200	67	255			116	455
09:00	109		77				186		21:00	40		107				147	
09:15	105		104				209		21:15	40		46				86	
09:30	111		92				203		21:30	39		38				77	
09:45	145	470	97	370			242	840	21:45	30	149	51	242			81	391
10:00	146		82				228		22:00	50		34				84	
10:15	104		87				191		22:15	47		38				85	
10:30	129		110				239		22:30	22		47				69	
10:45	144	523	105	384			249	907	22:45	35	154	21	140			56	294
11:00	128		112				240		23:00	30		34				64	
11:15	140		105				245		23:15	31		21				52	
11:30	124		110				234		23:30	20		19				39	
11:45	168	560	102	429			270	989	23:45	23	104	10	84			33	188
TOTALS		2440		2198				4638	TOTALS		4868		4974				9842
SPLIT %		52.6%		47.4%				32.0%	SPLIT %		49.5%		50.5%				68.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,308	7,172	0	0	14,480

AM Peak Hour	11:45	11:45					11:45		PM Peak Hour	14:30	15:15					15:15		
AM Pk Volume	626	481					1107		PM Pk Volume	683	739					1411		
Pk Hr Factor	0.932	0.884					0.948		Pk Hr Factor	0.959	0.919					0.956		
7 - 9 Volume	507	497	0	0			1004		4 - 6 Volume	1069	1214	0	0			2283		
7 - 9 Peak Hour	08:00	08:00					08:00		4 - 6 Peak Hour	16:00	16:00					16:00		
7 - 9 Pk Volume	297	260	0	0			557		4 - 6 Pk Volume	569	634	0	0			1203		
Pk Hr Factor	0.782	0.823	0.000	0.000			0.800		Pk Hr Factor	0.889	0.830	0.000	0.000			0.857		

Prepared by NDS/ATD

VOLUME

SR 29 N/O Lodi Ln

Day: Sunday
Date: 4/23/2017

City: St Helena
Project #: CA17_7313_001

DAILY TOTALS	NB	SB	EB	WB	Total
	5,982	6,682	0	0	12,664

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	19		19				38		12:00	113		131				244	
00:15	16		13				29		12:15	121		143				264	
00:30	15		7				22		12:30	129		151				280	
00:45	12	62	13	52			25	114	12:45	141	504	117	542			258	1046
01:00	17		13				30		13:00	129		153				282	
01:15	7		5				12		13:15	122		146				268	
01:30	4		6				10		13:30	116		159				275	
01:45	5	33	4	28			9	61	13:45	133	500	126	584			259	1084
02:00	4		2				6		14:00	141		152				293	
02:15	3		8				11		14:15	138		117				255	
02:30	2		5				7		14:30	117		134				251	
02:45	6	15	4	19			10	34	14:45	140	536	143	546			283	1082
03:00	3		5				8		15:00	131		148				279	
03:15	2		4				6		15:15	136		151				287	
03:30	3		3				6		15:30	126		140				266	
03:45	0	8	10	22			10	30	15:45	130	523	138	577			268	1100
04:00	1		5				6		16:00	120		160				280	
04:15	0		5				5		16:15	103		139				242	
04:30	6		6				12		16:30	104		124				228	
04:45	8	15	7	23			15	38	16:45	104	431	145	568			249	999
05:00	9		7				16		17:00	121		124				245	
05:15	6		8				14		17:15	84		133				217	
05:30	9		11				20		17:30	86		123				209	
05:45	10	34	22	48			32	82	17:45	90	381	146	526			236	907
06:00	34		14				48		18:00	71		124				195	
06:15	17		22				39		18:15	96		104				200	
06:30	20		29				49		18:30	64		84				148	
06:45	34	105	29	94			63	199	18:45	63	294	70	382			133	676
07:00	54		24				78		19:00	39		73				112	
07:15	46		27				73		19:15	54		68				122	
07:30	50		51				101		19:30	64		49				113	
07:45	38	188	49	151			87	339	19:45	59	216	58	248			117	464
08:00	57		49				106		20:00	49		61				110	
08:15	60		75				135		20:15	37		52				89	
08:30	81		87				168		20:30	56		29				85	
08:45	136	334	67	278			203	612	20:45	50	192	51	193			101	385
09:00	83		105				188		21:00	40		38				78	
09:15	100		119				219		21:15	38		23				61	
09:30	107		120				227		21:30	30		26				56	
09:45	97	387	132	476			229	863	21:45	38	146	26	113			64	259
10:00	105		120				225		22:00	29		21				50	
10:15	98		144				242		22:15	20		20				40	
10:30	103		131				234		22:30	28		21				49	
10:45	117	423	125	520			242	943	22:45	20	97	17	79			37	176
11:00	108		146				254		23:00	19		10				29	
11:15	128		147				275		23:15	17		10				27	
11:30	133		142				275		23:30	11		11				22	
11:45	130	499	134	569			264	1068	23:45	12	59	13	44			25	103
TOTALS		2103		2280				4383	TOTALS		3879		4402				8281
SPLIT %		48.0%		52.0%				34.6%	SPLIT %		46.8%		53.2%				65.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	5,982	6,682	0	0	12,664

AM Peak Hour	11:15	11:00			11:00	PM Peak Hour	14:00	15:15			14:45
AM Pk Volume	504	569			1068	PM Pk Volume	536	589			1115
Pk Hr Factor	0.947	0.968			0.971	Pk Hr Factor	0.950	0.920			0.971
7 - 9 Volume	522	429	0	0	951	4 - 6 Volume	812	1094	0	0	1906
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:15	16:00			16:00
7 - 9 Pk Volume	334	278	0	0	612	4 - 6 Pk Volume	432	568	0	0	999
Pk Hr Factor	0.614	0.799	0.000	0.000	0.754	Pk Hr Factor	0.893	0.888	0.000	0.000	0.892

Prepared by NDS/ATD

VOLUME

Lodi Ln E/O SR 29

Day: Thursday
Date: 4/20/2017

City: St Helena
Project #: CA17_7313_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	499	571	1,070

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		1		1		12:00			9		12		21	
00:15			0		0		0		12:15			6		17		23	
00:30			2		0		2		12:30			6		15		21	
00:45			0	2	0	1	0	3	12:45			7	28	15	59	22	87
01:00			1		0		1		13:00			16		6		22	
01:15			0		0		0		13:15			10		13		23	
01:30			0		0		0		13:30			12		11		23	
01:45			0	1	0		0	1	13:45			14	52	4	34	18	86
02:00			0		0		0		14:00			7		6		13	
02:15			1		1		2		14:15			12		14		26	
02:30			2		1		3		14:30			9		12		21	
02:45			0	3	0	2	0	5	14:45			10	38	11	43	21	81
03:00			0		0		0		15:00			12		17		29	
03:15			0		0		0		15:15			6		10		16	
03:30			0		0		0		15:30			4		21		25	
03:45			2	2	0		2	2	15:45			11	33	10	58	21	91
04:00			1		0		1		16:00			10		19		29	
04:15			2		1		3		16:15			8		9		17	
04:30			0		0		0		16:30			10		10		20	
04:45			0	3	0	1	0	4	16:45			3	31	8	46	11	77
05:00			0		0		0		17:00			11		13		24	
05:15			2		2		4		17:15			12		10		22	
05:30			1		1		2		17:30			10		11		21	
05:45			1	4	2	5	3	9	17:45			10	43	8	42	18	85
06:00			6		3		9		18:00			7		6		13	
06:15			4		3		7		18:15			2		8		10	
06:30			9		2		11		18:30			7		4		11	
06:45			10	29	5	13	15	42	18:45			5	21	4	22	9	43
07:00			4		5		9		19:00			5		5		10	
07:15			3		6		9		19:15			5		9		14	
07:30			6		4		10		19:30			2		4		6	
07:45			11	24	13	28	24	52	19:45			1	13	1	19	2	32
08:00			7		9		16		20:00			4		3		7	
08:15			11		10		21		20:15			4		3		7	
08:30			8		12		20		20:30			4		4		8	
08:45			9	35	17	48	26	83	20:45			4	16	2	12	6	28
09:00			5		9		14		21:00			4		1		5	
09:15			11		8		19		21:15			0		4		4	
09:30			9		11		20		21:30			3		1		4	
09:45			6	31	13	41	19	72	21:45			3	10	0	6	3	16
10:00			6		12		18		22:00			6		2		8	
10:15			10		16		26		22:15			2		1		3	
10:30			9		8		17		22:30			2		1		3	
10:45			6	31	6	42	12	73	22:45			2	12	1	5	3	17
11:00			8		12		20		23:00			2		0		2	
11:15			11		8		19		23:15			1		0		1	
11:30			6		16		22		23:30			0		1		1	
11:45			9	34	7	43	16	77	23:45			0	3	0	1	0	4
TOTALS				199		224		**423**	**TOTALS**				300		347		**647**
SPLIT %				47.0%		53.0%		**39.5%**	**SPLIT %**				46.4%		53.6%		**60.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	499	571	1,070

AM Peak Hour			07:45	09:30	**08:00**	**PM Peak Hour**			13:00	15:15	**14:15**
AM Pk Volume			37	52	**83**	**PM Pk Volume**			52	60	**97**
Pk Hr Factor			0.841	0.813	**0.798**	**Pk Hr Factor**			0.813	0.714	**0.836**
7 - 9 Volume	0	0	59	76	**135**	**4 - 6 Volume**	0	0	74	88	**162**
7 - 9 Peak Hour			07:45	08:00	**08:00**	**4 - 6 Peak Hour**			17:00	16:00	**17:00**
7 - 9 Pk Volume	0	0	37	48	**83**	**4 - 6 Pk Volume**	0	0	43	46	**85**
Pk Hr Factor	0.000	0.000	0.841	0.706	**0.798**	**Pk Hr Factor**	0.000	0.000	0.896	0.605	**0.885**

Prepared by NDS/ATD

VOLUME

Lodi Ln E/O SR 29

Day: Friday
Date: 4/21/2017

City: St Helena
Project #: CA17_7313_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	537	646	1,183

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		0		1		12:00			12		16		28	
00:15			0		0		0		12:15			14		17		31	
00:30			1		1		2		12:30			9		21		30	
00:45			0	2	0	1	0	3	12:45			11	46	16	70	27	116
01:00			0		0		0		13:00			11		14		25	
01:15			0		0		0		13:15			9		7		16	
01:30			0		0		0		13:30			16		9		25	
01:45			1	1	0		1	1	13:45			15	51	8	38	23	89
02:00			0		0		0		14:00			8		14		22	
02:15			0		0		0		14:15			7		16		23	
02:30			2		1		3		14:30			9		9		18	
02:45			1	3	0	1	1	4	14:45			13	37	12	51	25	88
03:00			0		0		0		15:00			15		13		28	
03:15			0		0		0		15:15			12		13		25	
03:30			1		0		1		15:30			5		15		20	
03:45			0	1	0		0	1	15:45			6	38	24	65	30	103
04:00			1		1		2		16:00			8		14		22	
04:15			2		0		2		16:15			20		14		34	
04:30			3		4		7		16:30			8		15		23	
04:45			0	6	1	6	1	12	16:45			9	45	14	57	23	102
05:00			0		0		0		17:00			5		15		20	
05:15			0		0		0		17:15			10		10		20	
05:30			0		2		2		17:30			8		10		18	
05:45			5	5	2	4	7	9	17:45			9	32	5	40	14	72
06:00			9		2		11		18:00			9		4		13	
06:15			4		6		10		18:15			8		6		14	
06:30			6		3		9		18:30			3		4		7	
06:45			11	30	2	13	13	43	18:45			2	22	4	18	6	40
07:00			1		2		3		19:00			8		3		11	
07:15			3		14		17		19:15			3		0		3	
07:30			6		10		16		19:30			4		5		9	
07:45			9	19	11	37	20	56	19:45			4	19	0	8	4	27
08:00			8		12		20		20:00			2		3		5	
08:15			9		11		20		20:15			6		2		8	
08:30			3		7		10		20:30			2		3		5	
08:45			6	26	23	53	29	79	20:45			4	14	4	12	8	26
09:00			12		11		23		21:00			8		3		11	
09:15			8		14		22		21:15			3		4		7	
09:30			10		9		19		21:30			2		0		2	
09:45			8	38	6	40	14	78	21:45			4	17	2	9	6	26
10:00			6		27		33		22:00			2		2		4	
10:15			5		17		22		22:15			2		2		4	
10:30			10		6		16		22:30			4		2		6	
10:45			13	34	8	58	21	92	22:45			3	11	1	7	4	18
11:00			11		10		21		23:00			1		2		3	
11:15			6		15		21		23:15			0		1		1	
11:30			15		14		29		23:30			2		0		2	
11:45			5	37	16	55	21	92	23:45			0	3	0	3	0	6
TOTALS				202		268		**470**	**TOTALS**				335		378		**713**
SPLIT %				43.0%		57.0%		**39.7%**	**SPLIT %**				47.0%		53.0%		**60.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	537	646	1,183

AM Peak Hour				11:30	11:45	**11:45**	**PM Peak Hour**				13:00	12:00	**12:00**
AM Pk Volume				46	70	**110**	**PM Pk Volume**				51	70	**116**
Pk Hr Factor				0.767	0.833	**0.887**	**Pk Hr Factor**				0.797	0.833	**0.935**
7 - 9 Volume	0	0		45	90	**135**	**4 - 6 Volume**	0	0		77	97	**174**
7 - 9 Peak Hour				07:30	08:00	**08:00**	**4 - 6 Peak Hour**				16:00	16:15	**16:00**
7 - 9 Pk Volume	0	0		32	53	**79**	**4 - 6 Pk Volume**	0	0		45	58	**102**
Pk Hr Factor	0.000	0.000		0.889	0.576	**0.681**	**Pk Hr Factor**	0.000	0.000		0.563	0.967	**0.750**

Prepared by NDS/ATD

VOLUME

Lodi Ln E/O SR 29

Day: Saturday
Date: 4/22/2017

City: St Helena
Project #: CA17_7313_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	436	524	960

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					1		0		1		12:00					5		18		23	
00:15					0		0		0		12:15					7		19		26	
00:30					1		0		1		12:30					5		7		12	
00:45					0	2	0		0	2	12:45					12	29	8	52	20	81
01:00					0		0		0		13:00					6		13		19	
01:15					0		0		0		13:15					6		13		19	
01:30					2		0		2		13:30					12		9		21	
01:45					0	2	1	1	1	3	13:45					10	34	8	43	18	77
02:00					1		0		1		14:00					10		14		24	
02:15					1		0		1		14:15					4		9		13	
02:30					0		0		0		14:30					6		5		11	
02:45					1	3	1	1	2	4	14:45					8	28	12	40	20	68
03:00					0		0		0		15:00					12		11		23	
03:15					0		0		0		15:15					5		15		20	
03:30					0		0		0		15:30					9		12		21	
03:45					0		0		0		15:45					13	39	11	49	24	88
04:00					0		0		0		16:00					11		7		18	
04:15					0		0		0		16:15					13		12		25	
04:30					0		0		0		16:30					6		8		14	
04:45					0		0		0		16:45					7	37	14	41	21	78
05:00					0		0		0		17:00					8		11		19	
05:15					1		0		1		17:15					11		10		21	
05:30					0		0		0		17:30					8		6		14	
05:45					2	3	2	2	4	5	17:45					6	33	4	31	10	64
06:00					1		2		3		18:00					14		12		26	
06:15					1		0		1		18:15					5		6		11	
06:30					5		1		6		18:30					3		2		5	
06:45					7	14	2	5	9	19	18:45					4	26	3	23	7	49
07:00					3		5		8		19:00					10		5		15	
07:15					2		7		9		19:15					3		3		6	
07:30					0		5		5		19:30					4		6		10	
07:45					3	8	4	21	7	29	19:45					7	24	3	17	10	41
08:00					8		8		16		20:00					8		3		11	
08:15					9		3		12		20:15					7		2		9	
08:30					7		5		12		20:30					3		2		5	
08:45					5	29	5	21	10	50	20:45					5	23	4	11	9	34
09:00					1		12		13		21:00					0		3		3	
09:15					9		7		16		21:15					2		2		4	
09:30					6		7		13		21:30					4		3		7	
09:45					8	24	9	35	17	59	21:45					2	8	3	11	5	19
10:00					7		16		23		22:00					3		1		4	
10:15					9		10		19		22:15					3		3		6	
10:30					9		15		24		22:30					2		1		3	
10:45					5	30	8	49	13	79	22:45					0	8	2	7	2	15
11:00					6		15		21		23:00					0		0		0	
11:15					6		14		20		23:15					3		2		5	
11:30					5		17		22		23:30					0		2		2	
11:45					11	28	13	59	24	87	23:45					1	4	1	5	2	9
TOTALS						143		194		**337**	**TOTALS**						293		330		**623**
SPLIT %						42.4%		57.6%		**35.1%**	**SPLIT %**						47.0%		53.0%		**64.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	436	524	960

AM Peak Hour			09:45	11:30	**11:30**	**PM Peak Hour**			15:30	12:00	**15:00**
AM Pk Volume			33	67	**95**	**PM Pk Volume**			46	52	**88**
Pk Hr Factor			0.917	0.882	**0.913**	**Pk Hr Factor**			0.885	0.684	**0.917**
7 - 9 Volume	0	0	37	42	**79**	**4 - 6 Volume**	0	0	70	72	**142**
7 - 9 Peak Hour			08:00	07:15	**08:00**	**4 - 6 Peak Hour**			16:00	16:15	**16:15**
7 - 9 Pk Volume	0	0	29	24	**50**	**4 - 6 Pk Volume**	0	0	37	45	**79**
Pk Hr Factor	0.000	0.000	0.806	0.750	**0.781**	**Pk Hr Factor**	0.000	0.000	0.712	0.804	**0.790**

Prepared by NDS/ATD

VOLUME

Lodi Ln E/O SR 29

Day: Sunday
Date: 4/23/2017

City: St Helena
Project #: CA17_7313_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	401	384	785

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		1		1		12:00			4		7		11	
00:15			0		3		3		12:15			6		12		18	
00:30			0		0		0		12:30			6		14		20	
00:45			0		0	4	0	4	12:45			8	24	4	37	12	61
01:00			1		1		2		13:00			10		7		17	
01:15			1		0		1		13:15			5		4		9	
01:30			1		0		1		13:30			10		11		21	
01:45			0	3	0	1	0	4	13:45			8	33	7	29	15	62
02:00			0		0		0		14:00			14		8		22	
02:15			2		0		2		14:15			7		3		10	
02:30			0		0		0		14:30			4		13		17	
02:45			1	3	1	1	2	4	14:45			5	30	7	31	12	61
03:00			0		0		0		15:00			15		7		22	
03:15			0		2		2		15:15			7		6		13	
03:30			0		0		0		15:30			4		11		15	
03:45			1	1	0	2	1	3	15:45			9	35	9	33	18	68
04:00			0		0		0		16:00			4		4		8	
04:15			0		0		0		16:15			10		5		15	
04:30			0		0		0		16:30			5		5		10	
04:45			0		0		0		16:45			6	25	5	19	11	44
05:00			0		0		0		17:00			4		6		10	
05:15			0		0		0		17:15			4		4		8	
05:30			1		1		2		17:30			4		6		10	
05:45			1	2	1	2	2	4	17:45			8	20	3	19	11	39
06:00			0		1		1		18:00			4		10		14	
06:15			0		1		1		18:15			2		4		6	
06:30			1		0		1		18:30			1		3		4	
06:45			2	3	2	4	4	7	18:45			5	12	1	18	6	30
07:00			2		1		3		19:00			1		3		4	
07:15			2		1		3		19:15			6		4		10	
07:30			4		2		6		19:30			2		7		9	
07:45			3	11	7	11	10	22	19:45			4	13	1	15	5	28
08:00			7		5		12		20:00			2		1		3	
08:15			5		8		13		20:15			3		1		4	
08:30			14		10		24		20:30			8		0		8	
08:45			9	35	16	39	25	74	20:45			1	14	1	3	2	17
09:00			4		6		10		21:00			7		3		10	
09:15			13		5		18		21:15			4		2		6	
09:30			13		6		19		21:30			3		0		3	
09:45			12	42	9	26	21	68	21:45			1	15	0	5	1	20
10:00			14		9		23		22:00			1		0		1	
10:15			8		7		15		22:15			3		0		3	
10:30			8		10		18		22:30			3		2		5	
10:45			8	38	7	33	15	71	22:45			2	9	0	2	2	11
11:00			11		17		28		23:00			1		0		1	
11:15			8		12		20		23:15			0		0		0	
11:30			5		12		17		23:30			0		0		0	
11:45			7	31	9	50	16	81	23:45			1	2	0		1	2
TOTALS				169		173		**342**	**TOTALS**				232		211		**443**
SPLIT %				49.4%		50.6%		**43.6%**	**SPLIT %**				52.4%		47.6%		**56.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	401	384	785

AM Peak Hour			09:15		11:00		**09:15**	**PM Peak Hour**			13:30		12:00		**13:30**
AM Pk Volume			52		50		**81**	**PM Pk Volume**			39		37		**68**
Pk Hr Factor			0.929		0.735		**0.880**	**Pk Hr Factor**			0.696		0.661		**0.773**
7 - 9 Volume	0	0	46		50		**96**	**4 - 6 Volume**	0	0	45		38		**83**
7 - 9 Peak Hour			08:00		08:00		**08:00**	**4 - 6 Peak Hour**			16:00		16:15		**16:15**
7 - 9 Pk Volume	0	0	35		39		**74**	**4 - 6 Pk Volume**	0	0	25		21		**46**
Pk Hr Factor	0.000	0.000	0.625		0.609		**0.740**	**Pk Hr Factor**	0.000	0.000	0.625		0.875		**0.767**

FREEMARK ABBEY DRIVEWAY COUNT SUMMARY

SPRING 2017

PEAK HOUR VOLUMES

	Thursday			Friday			Saturday			Sunday		
	Total	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
1 SR 29 North	4	1	3	1	0	1	2	2	0	1	1	0
2 SR 29 South	10	4	6	19	7	12	23	14	9	13	7	6
3 Lodi Ln West	10	2	8	11	7	4	7	4	3	5	3	2
4 Lodi Ln East	3	1	2	6	3	3	1	1	0	0	0	0
	27	**8**	**19**	**37**	**17**	**20**	**33**	**21**	**12**	**19**	**11**	**8**

Weekday PM Peak Average	**32**	**13**	**19**
Saturday MD Peak Average	**33**	**21**	**12**

DAILY VOLUMES

	Thursday			Friday			Saturday			Sunday		
	Total	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
1 SR 29 North	34	14	20	39	17	22	19	9	10	20	10	10
2 SR 29 South	148	75	73	184	84	100	225	105	120	155	76	79
3 Lodi Ln West	99	51	48	126	71	55	114	63	51	107	57	50
4 Lodi Ln East	56	30	26	65	33	32	30	16	14	17	8	9
	337	**170**	**167**	**414**	**205**	**209**	**388**	**193**	**195**	**299**	**151**	**148**

Daily Average **366**

Napa County Peak Hour Heavy Vehicle Percentages

September and October - 2017 and 2018

1. SR29/Lodi Ln		**Vehicles**	**5+ Axle Trucks**	**Grape Trucks**	**Total Trucks**	**%Total Trucks**
22-Sep-17 Friday	7:45-8:45 AM	1090	59	27	86	8.00
	3:45-4:45 PM	1474	43	10	53	**4.00**
23-Sep-17 Saturday	1:00-2:00 PM	1407	18	8	26	**2.00**
	3:00-4:00 PM	1430	30	1	31	2.00

2. Silverado Trail/Lodi Ln		**Vehicles**	**5+ Axle Trucks**	**Grape Trucks**	**Total Trucks**	**%Total Trucks**
22-Sep-17 Friday	8:00-9:00 AM	470	12	13	25	5.00
	3:45-4:45 PM	750	10	4	14	**2.00**
23-Sep-17 Saturday	1:00-2:00 PM	592	13	4	17	**3.00**
	2:15-3:15 PM	663	11	4	15	2.00

Note: All volumes are total volumes through intersection.

Source: Crane Transportation Group

GROWTH FACTOR CALCULATIONS

Facility	PM 2010	PM 2030	PM Growth Factor	Adjusted for 2017	
SR 29	1819	2772	1.52	1.34	
Silverado Trail	276	1012	3.67	2.74	
Deer Park Rd	918	1174	1.28	1.18	Applied to Lodi Ln

*PM Growth Factors used to calculate the PM and Wknd 2030 volumes from existing volumes

This page intentionally left blank

Appendix D

Intersection Level of Service Calculations

This page intentionally left blank

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	21	689	22	14	515
Future Vol, veh/h	22	21	689	22	14	515
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	22	21	703	22	14	526

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1268	714	0	0	725	0
Stage 1	714	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	184	428	-	-	869	-
Stage 1	482	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	181	428	-	-	869	-
Mov Cap-2 Maneuver	181	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.3	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	252	869	-
HCM Lane V/C Ratio	-	-	0.174	0.016	-
HCM Control Delay (s)	-	-	22.3	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	38	16	280	243	17
Future Vol, veh/h	10	38	16	280	243	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	42	18	311	270	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	627	280	289	0	-	0
Stage 1	280	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	447	759	1273	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	439	759	1273	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1273	-	659	-	-
HCM Lane V/C Ratio	0.014	-	0.081	-	-
HCM Control Delay (s)	7.9	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	24	642	17	25	490
Future Vol, veh/h	26	24	642	17	25	490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	26	705	19	27	538

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1307	715	0	0	724	0
Stage 1	715	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	176	431	-	-	879	-
Stage 1	485	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	171	431	-	-	879	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.3	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	241	879	-
HCM Lane V/C Ratio	-	-	0.228	0.031	-
HCM Control Delay (s)	-	-	24.3	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	26	30	364	201	37
Future Vol, veh/h	22	26	30	364	201	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	28	32	391	216	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	691	236	256	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	409	801	1303	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	396	801	1303	-	-	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1303	-	545	-	-
HCM Lane V/C Ratio	0.025	-	0.095	-	-
HCM Control Delay (s)	7.8	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	25	923	26	17	690
Future Vol, veh/h	26	25	923	26	17	690
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	26	25	923	26	17	690

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1660	936	0	0	949	0
Stage 1	936	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	106	319	-	-	715	-
Stage 1	378	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	103	319	-	-	715	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	378	-	-	-	-	-
Stage 2	465	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.5	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	154	715	-
HCM Lane V/C Ratio	-	-	0.331	0.024	-
HCM Control Delay (s)	-	-	39.5	10.2	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	45	19	767	666	20
Future Vol, veh/h	12	45	19	767	666	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	45	19	767	666	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1481	676	686	0	-	0
Stage 1	676	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	138	453	908	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	133	453	908	-	-	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	908	-	301	-	-
HCM Lane V/C Ratio	0.021	-	0.189	-	-
HCM Control Delay (s)	9	0	19.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	28	860	20	30	657
Future Vol, veh/h	31	28	860	20	30	657
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	28	860	20	30	657

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1587	870	0	0	880	0
Stage 1	870	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	119	351	-	-	768	-
Stage 1	410	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	114	351	-	-	768	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	465	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.6	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	168	768	-
HCM Lane V/C Ratio	-	-	0.351	0.039	-
HCM Control Delay (s)	-	-	37.6	9.9	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	31	35	997	551	44
Future Vol, veh/h	26	31	35	997	551	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	31	35	997	551	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1640	573	595	0	-	0
Stage 1	573	-	-	-	-	-
Stage 2	1067	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	110	517	976	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	101	517	976	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	329	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	976	-	180	-	-
HCM Lane V/C Ratio	0.036	-	0.317	-	-
HCM Control Delay (s)	8.8	0	34	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	25	692	26	16	519
Future Vol, veh/h	27	25	692	26	16	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	28	26	706	27	16	530

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1282	720	0	0	733	0
Stage 1	720	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	181	425	-	-	863	-
Stage 1	478	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	178	425	-	-	863	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	556	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.5	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	247	863	-
HCM Lane V/C Ratio	-	-	0.215	0.019	-
HCM Control Delay (s)	-	-	23.5	9.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	41	18	280	243	18
Future Vol, veh/h	11	41	18	280	243	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	46	20	311	270	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	631	280	290	0	-	0
Stage 1	280	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	445	759	1272	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	437	759	1272	-	-	-
Mov Cap-2 Maneuver	437	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	713	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1272	-	657	-	-
HCM Lane V/C Ratio	0.016	-	0.088	-	-
HCM Control Delay (s)	7.9	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	29	648	27	31	495
Future Vol, veh/h	33	29	648	27	31	495
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	32	712	30	34	544

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1339	727	0	0	742	0
Stage 1	727	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	168	424	-	-	865	-
Stage 1	478	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	161	424	-	-	865	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.5	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	227	865	-
HCM Lane V/C Ratio	-	-	0.3	0.039	-
HCM Control Delay (s)	-	-	27.5	9.3	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	30	35	364	201	39
Future Vol, veh/h	23	30	35	364	201	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	25	32	38	391	216	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	704	237	258	0	-	0
Stage 1	237	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	402	800	1301	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	387	800	1301	-	-	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	629	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1301	-	547	-	-
HCM Lane V/C Ratio	0.029	-	0.104	-	-
HCM Control Delay (s)	7.8	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	29	926	30	19	694
Future Vol, veh/h	31	29	926	30	19	694
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	31	29	926	30	19	694

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1673	941	0	0	956	0
Stage 1	941	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	104	317	-	-	711	-
Stage 1	376	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	101	317	-	-	711	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.7	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	151	711	-
HCM Lane V/C Ratio	-	-	0.397	0.027	-
HCM Control Delay (s)	-	-	43.7	10.2	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	1.7	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	29	926	30	19	694
Future Vol, veh/h	31	29	926	30	19	694
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	31	29	926	30	19	694

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1673	941	0	0	956	0
Stage 1	941	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	104	317	-	-	711	-
Stage 1	376	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	101	317	-	-	711	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.2	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	101	317	711	-
HCM Lane V/C Ratio	-	-	0.307	0.091	0.027	-
HCM Control Delay (s)	-	-	55.7	17.5	10.2	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	1.2	0.3	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	48	21	767	666	21
Future Vol, veh/h	13	48	21	767	666	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	48	21	767	666	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1486	677	687	0	-	0
Stage 1	677	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	137	453	907	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	453	907	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.2	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	907	-	298	-	-
HCM Lane V/C Ratio	0.023	-	0.205	-	-
HCM Control Delay (s)	9.1	0	20.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	33	866	30	36	662
Future Vol, veh/h	38	33	866	30	36	662
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	33	866	30	36	662

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1615	881	0	0	896	0
Stage 1	881	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	114	346	-	-	757	-
Stage 1	405	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	109	346	-	-	757	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.3	0	0.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	160	757	-
HCM Lane V/C Ratio	-	-	0.444	0.048	-
HCM Control Delay (s)	-	-	44.3	10	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	2	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	33	866	30	36	662
Future Vol, veh/h	38	33	866	30	36	662
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	33	866	30	36	662

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1615	881	0	0	896	0
Stage 1	881	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	114	346	-	-	757	-
Stage 1	405	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	109	346	-	-	757	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37	0	0.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	109	346	757	-
HCM Lane V/C Ratio	-	-	0.349	0.095	0.048	-
HCM Control Delay (s)	-	-	54.8	16.5	10	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	35	40	997	551	46
Future Vol, veh/h	27	35	40	997	551	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	27	35	40	997	551	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1651	574	597	0	-	0
Stage 1	574	-	-	-	-	-
Stage 2	1077	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	108	516	975	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	98	516	975	-	-	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	326	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.9	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	975	-	181	-	-
HCM Lane V/C Ratio	0.041	-	0.343	-	-
HCM Control Delay (s)	8.8	0	34.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

This page intentionally left blank

Appendix E

Signal Warrants Analysis

This page intentionally left blank

Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Existing

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.26 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 43 vph

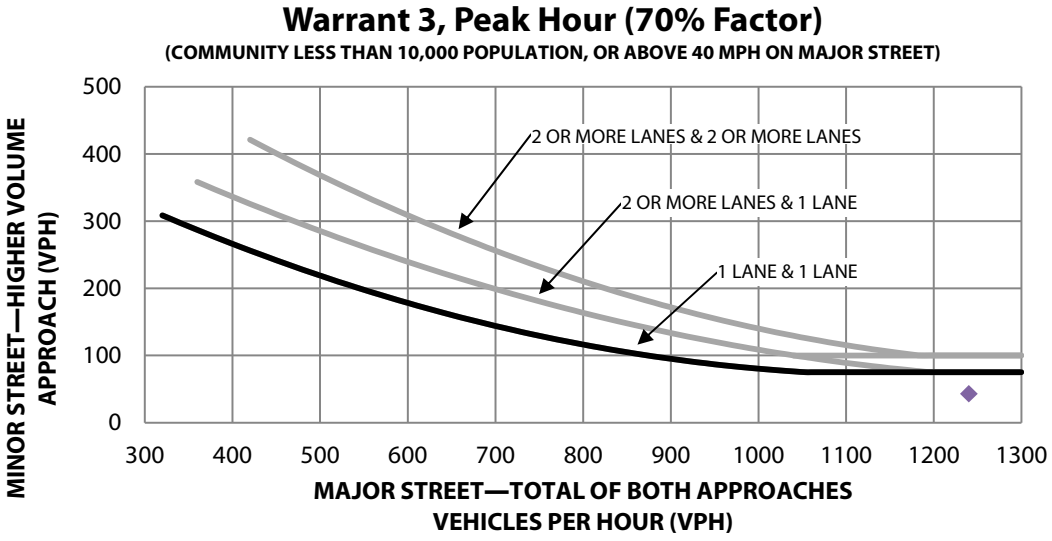
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1283 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Existing

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.14 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 48 vph

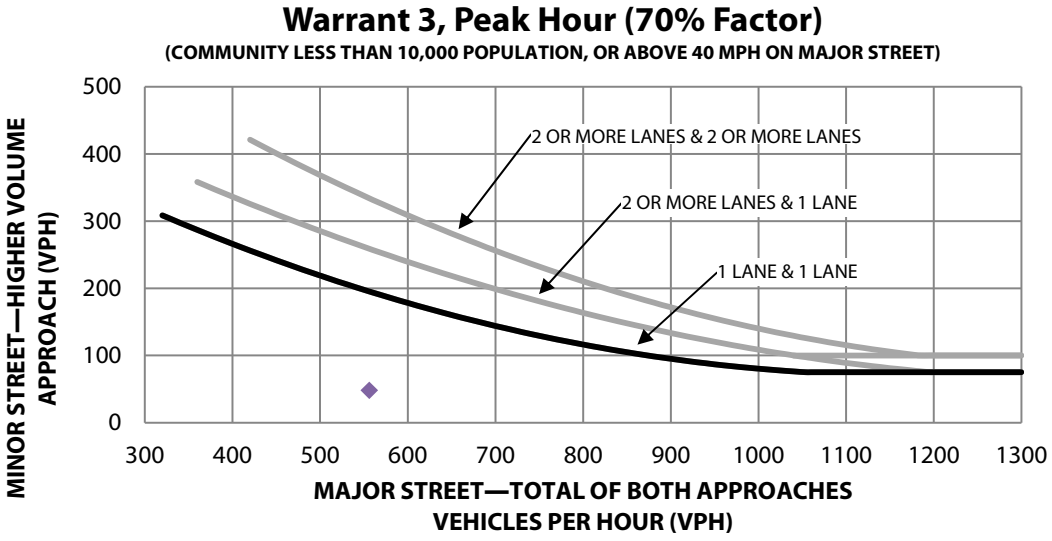
Condition A3 — Not Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 604 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: MD Existing

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.34 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 50 vph

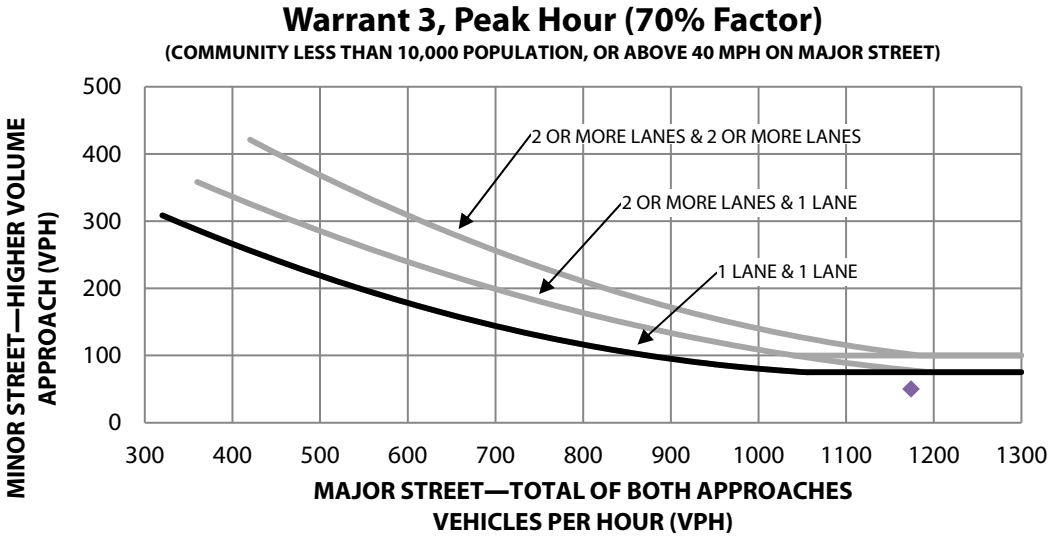
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1224 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Saturday, April 22, 2017
Scenario: Wknd MD Existing

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.16 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 48 vph

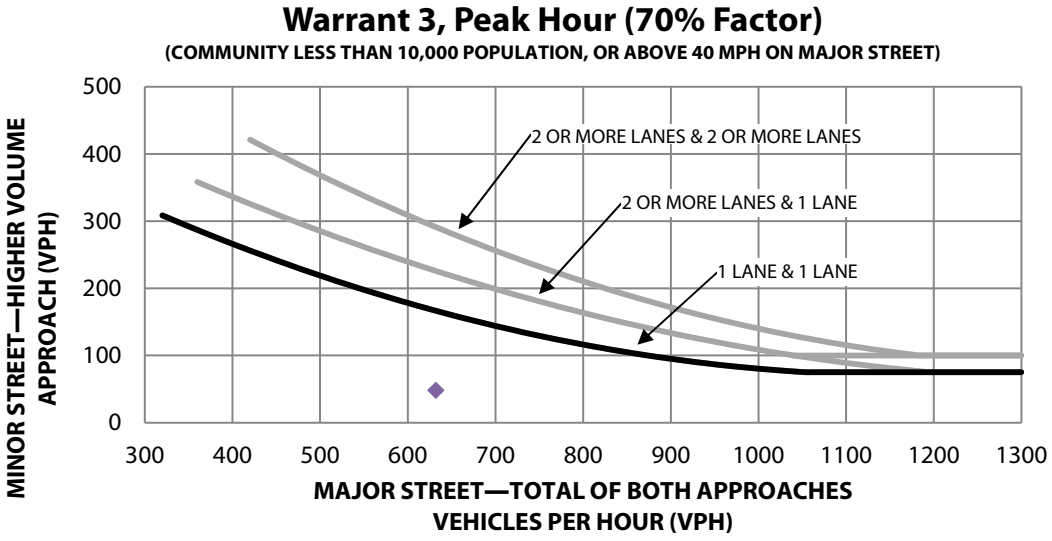
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 680 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Permitted

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.47 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 69 vph

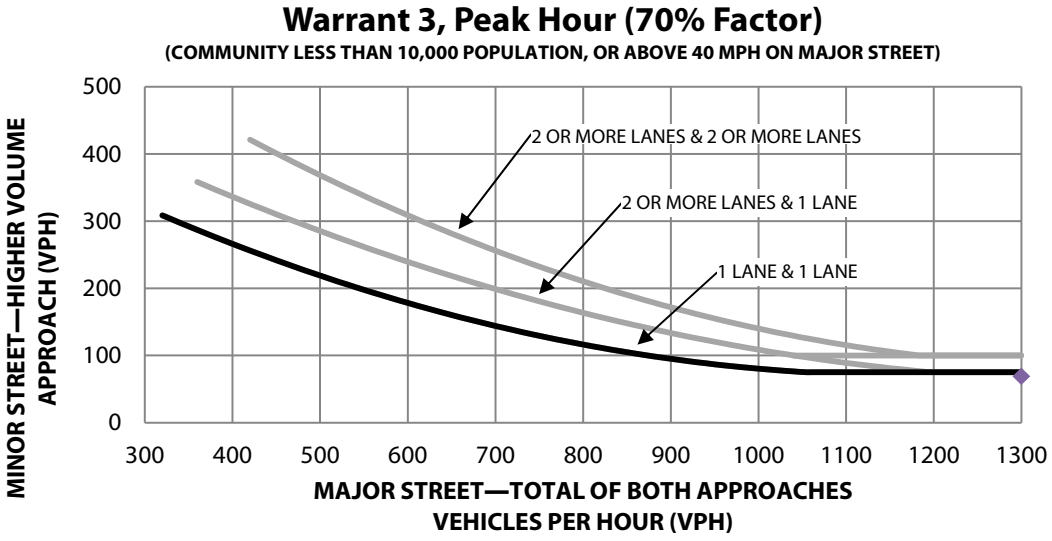
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1369 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Perrmitted

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.18 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 59 vph

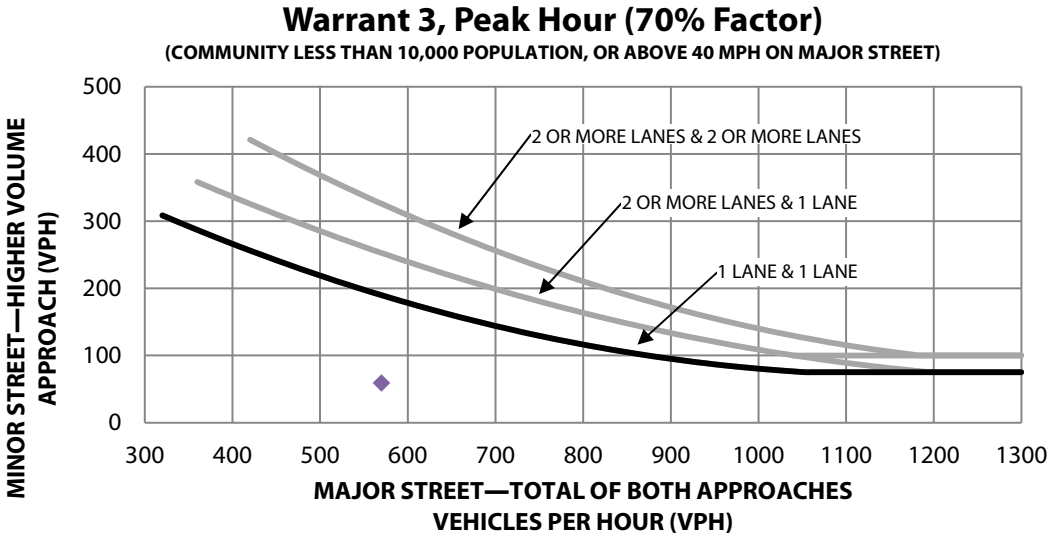
Condition A3 — Not Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 629 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: MD Permitted

Warrant 3 Met?: Met when either Condition A or B is met — **Yes**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.78 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 95 vph

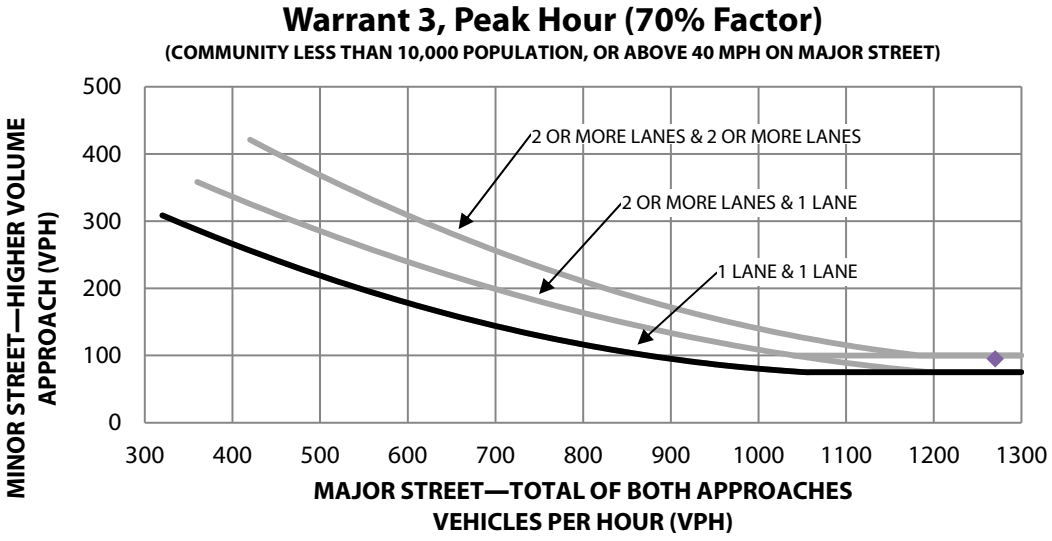
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1365 vph

Condition B — Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Saturday, April 22, 2017
Scenario: Wknd MD Permitted

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.23 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 67 vph

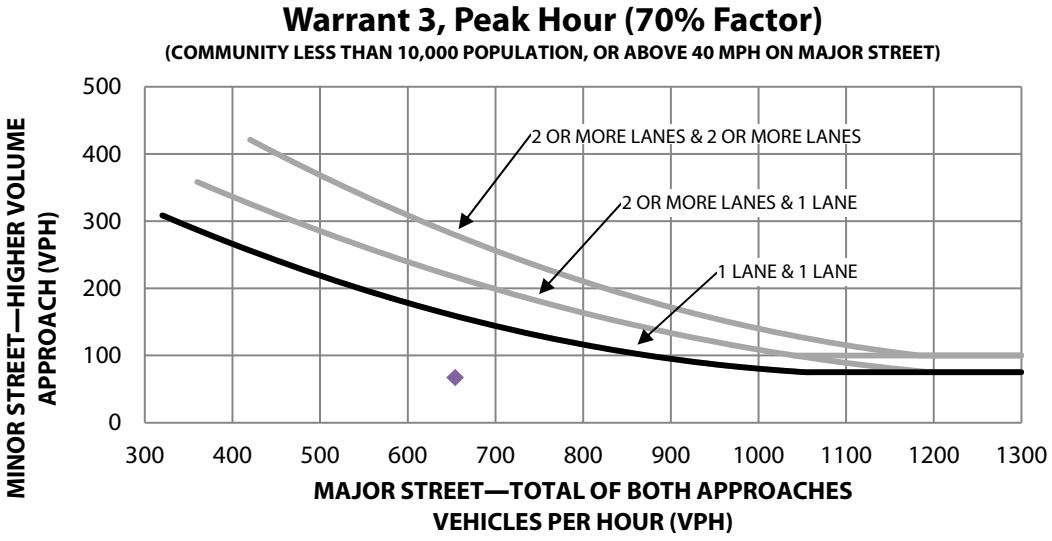
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 721 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Future

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.55 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 51 vph

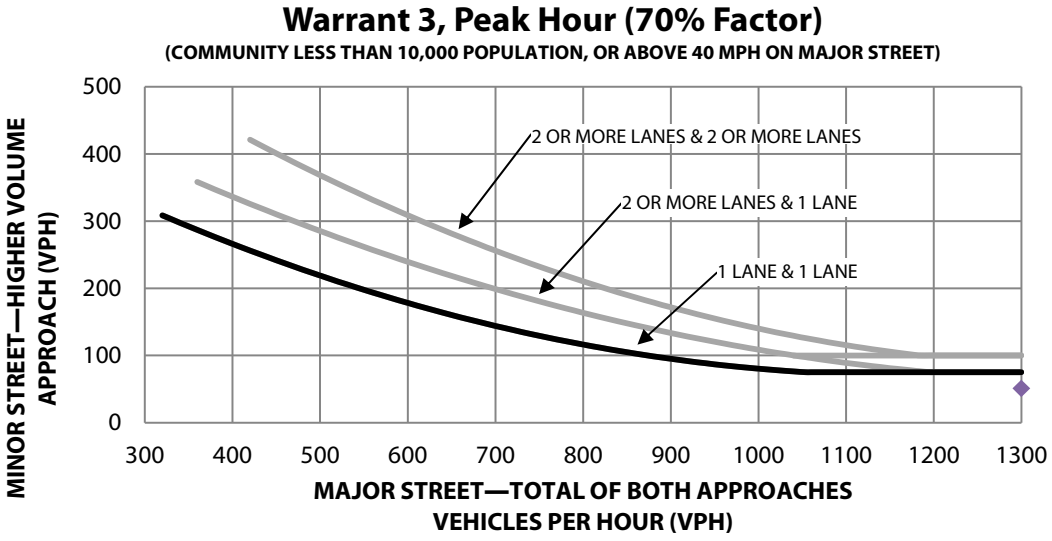
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1707 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Future

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.28 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 57 vph

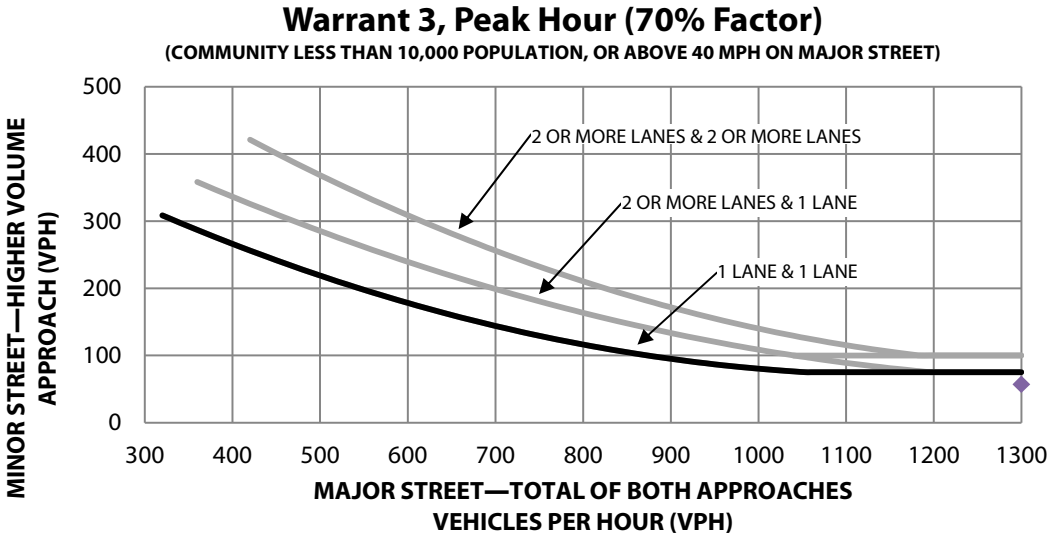
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1529 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: MD Future

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.62 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 59 vph

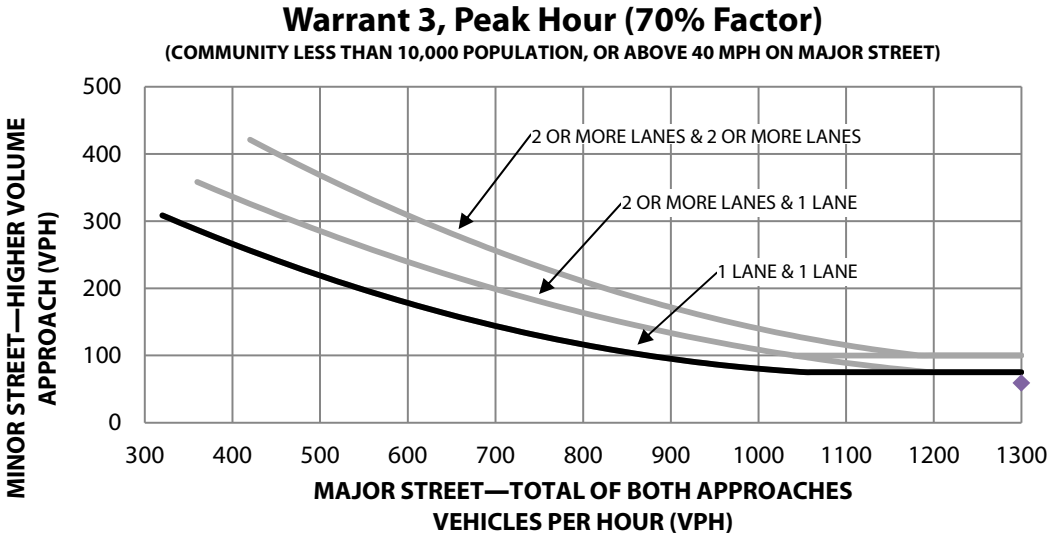
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1626 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Saturday, April 22, 2017
Scenario: Wknd MD Future

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.48 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 57 vph

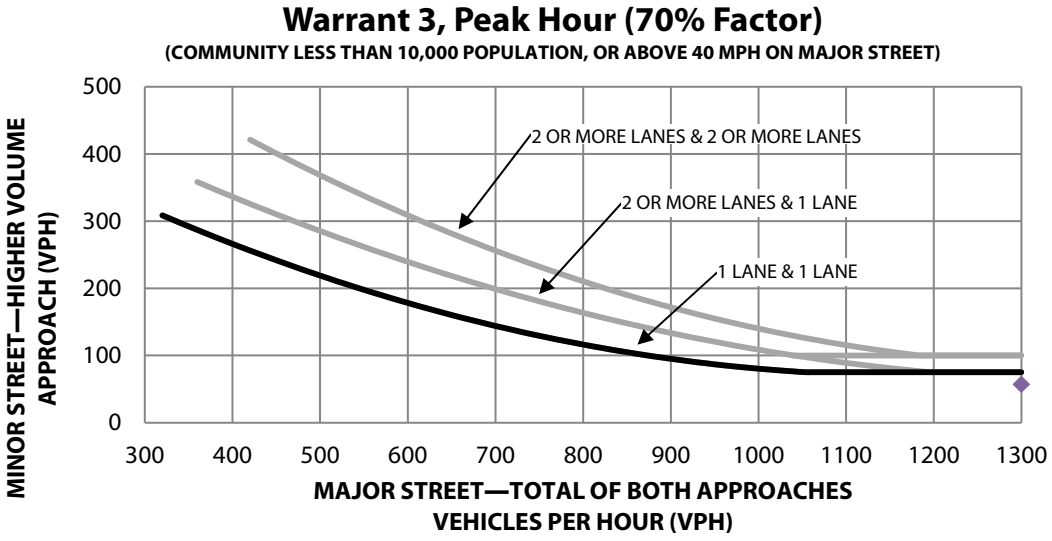
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1684 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Existing + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.34 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 52 vph

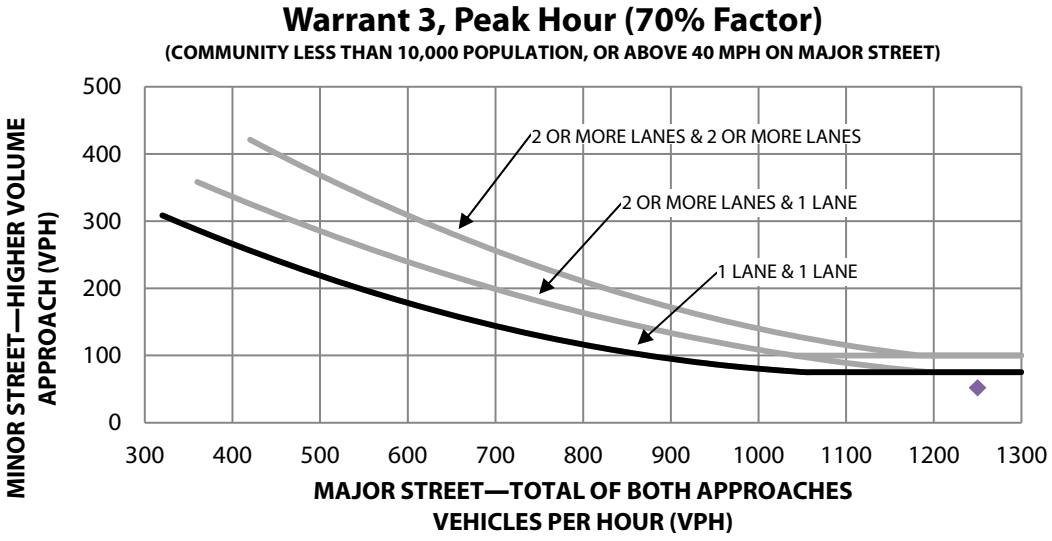
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1302 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Existing + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.15 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 52 vph

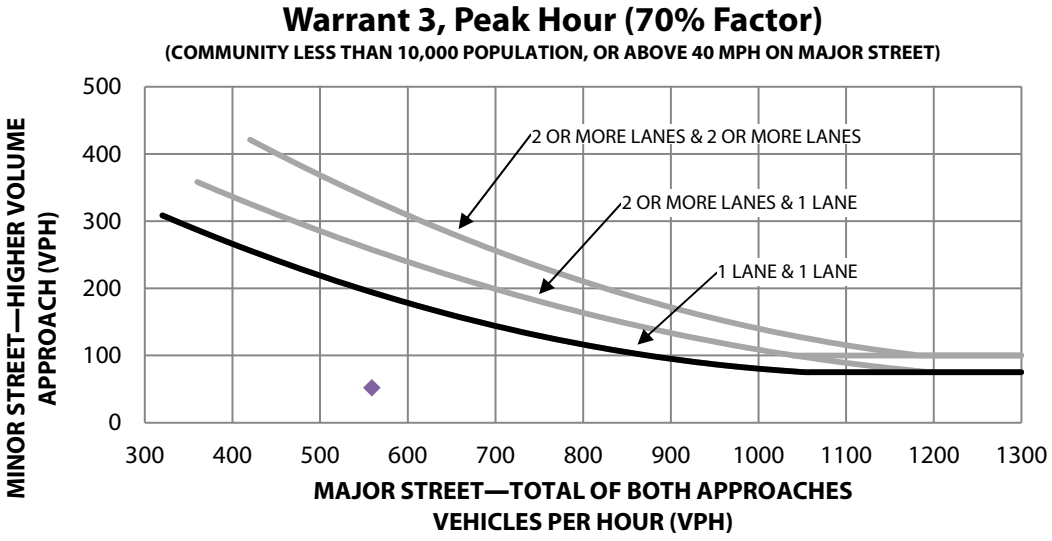
Condition A3 — Not Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 611 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: MD Existing + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.47 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 62 vph

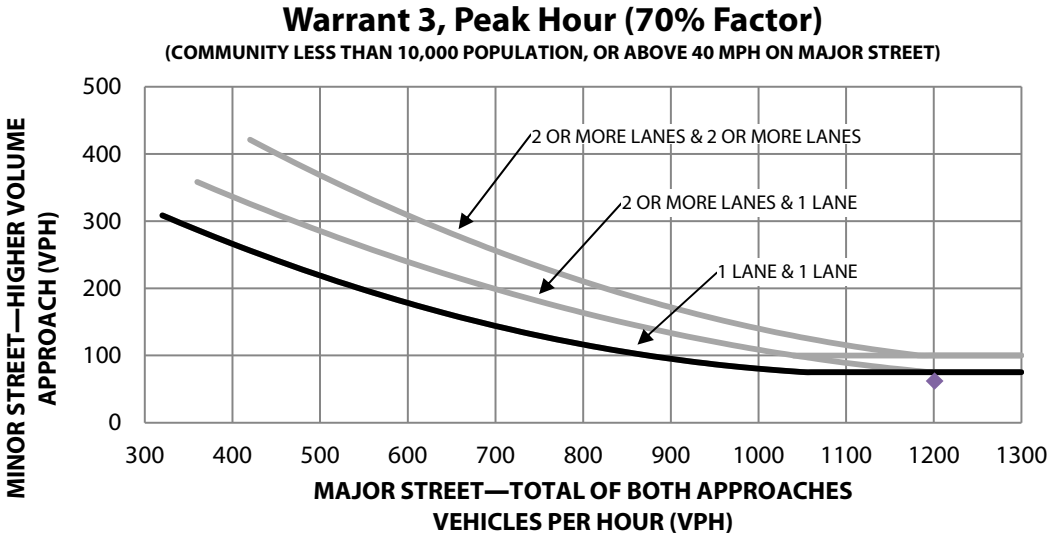
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1263 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Saturday, April 22, 2017
Scenario: Wknd MD Existing + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.18 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 53 vph

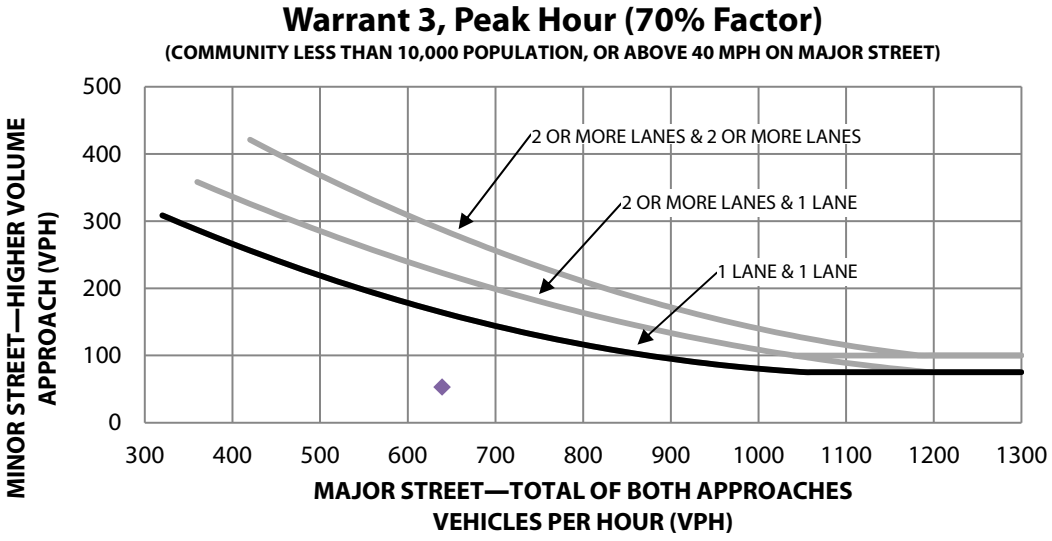
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 692 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Future + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.72 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 60 vph

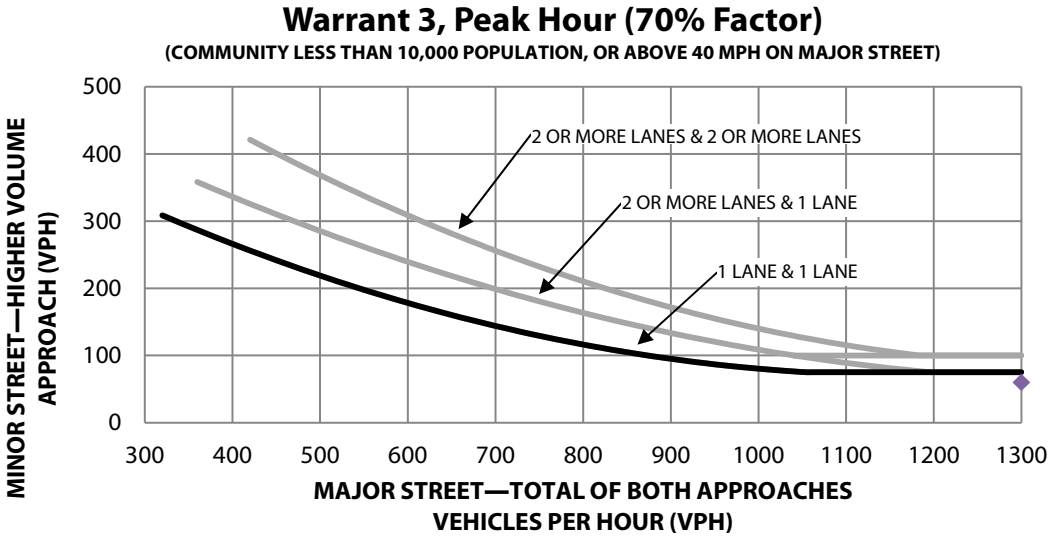
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1729 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: PM Future + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.3 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 61 vph

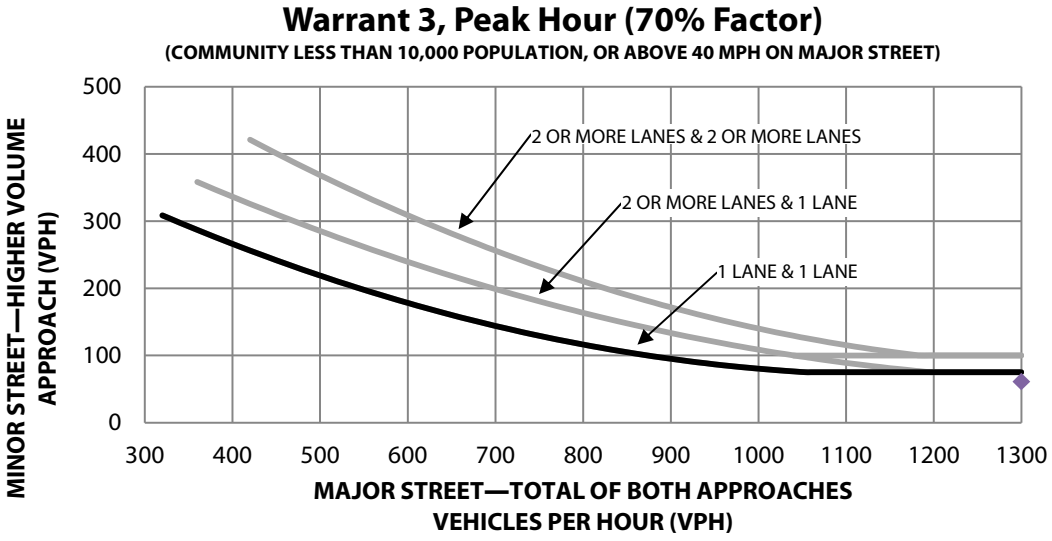
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1536 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

SR 29 & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 1

	Major Street	Minor Street
Street Name	SR 29	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Thursday, April 20, 2017
Scenario: MD Future + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.87 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 71 vph

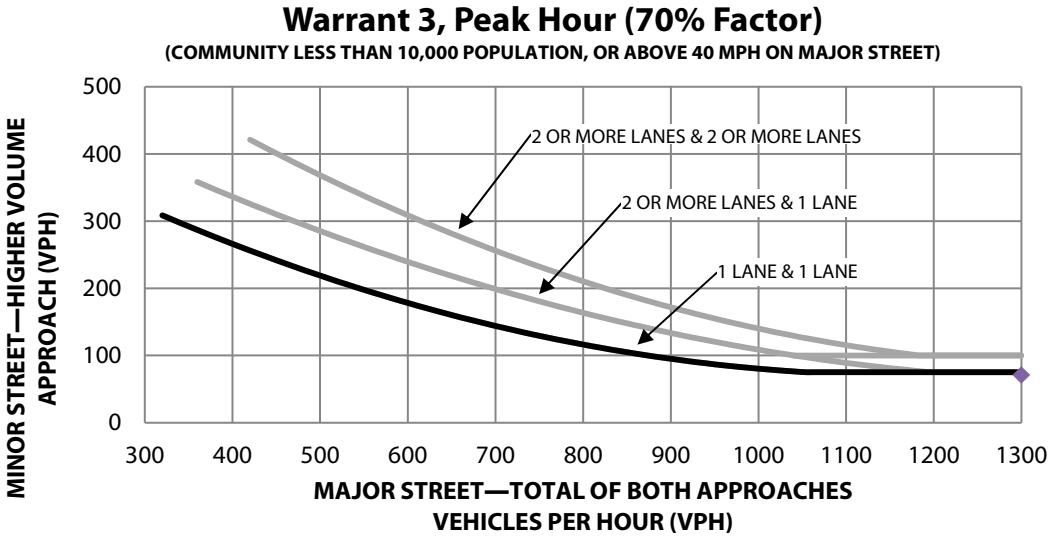
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1665 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Silverado Trail & Lodi Ln
County of Napa

Project Name: Inn at the Abbey

Intersection: 2

	Major Street	Minor Street
Street Name	Silverado Trail	Lodi Ln
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	50	40

Population less than 10,000? No
Date of Count: Saturday, April 22, 2017
Scenario: Wknd MD Future + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.53 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 62 vph

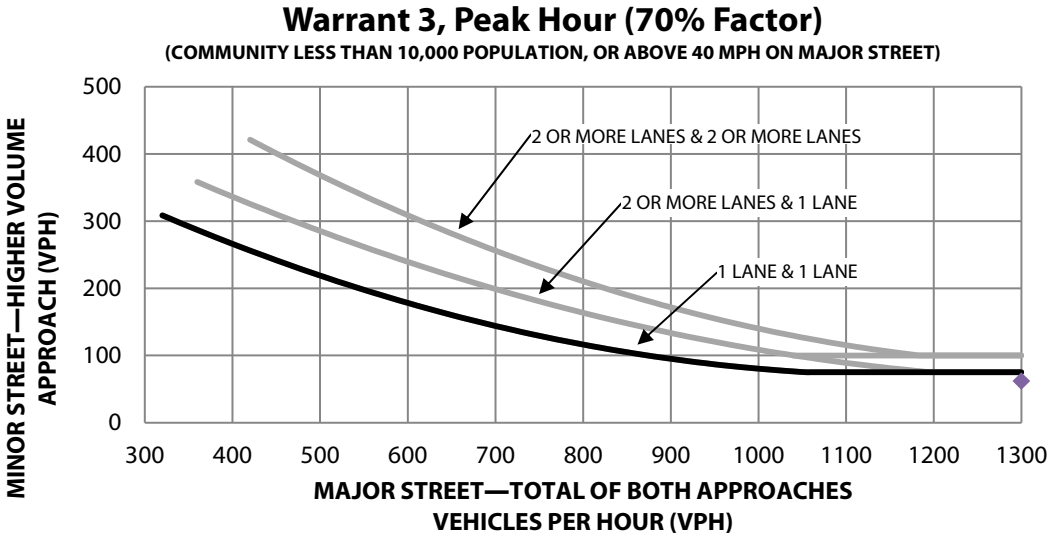
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 1696 vph

Condition B — Not Met

The plotted point falls above the curve



Appendix F

Queuing Calculations

This page intentionally left blank

Queue Length Estimation at Two-Way STOP Controlled Intersection

Project Information

Analyst:	CJN	Agency/Co.:	W-Trans
Analysis Time Period:	Weekday PM	Project ID:	NAX062
Date Performed:	5/30/2017	Scenario	PM Future + Project
Jurisdiction:	County of Napa		
Intersection:	SR 29/Lodi Ln		
East/West Street:	Lodi Ln		
North/South Street:	SR 29		

Instructions

Step 1 Input Volumes on **Volumes** sheet

Lane Group Code :			
	MJL	1	Major street separate left turn lane / TWLT
	MNLTR	2	Minor street shared left, through and right lane
	MNLR	3	Minor street shared left, and right lane
	MNL	4	Minor street separate left turn lane
	MNR	5	Minor street separate right turn lane

Step 2 Calculate Input Parameters

Calculate Lane Group Volumes, % Heavy Vehicles, and Conflicting Volumes (2.0% default)

Identify the presence of an upstream signal within 1/4 mile on major approches (Signal, 0 default)

Identify the presence of a separate LT lane / TWLT on major street approaches (LT, 1 default)

Verify the input ranges to feed into the models (see QueueLengthsModels sheet)

Step 3 **Obtain** queue lengths in feet from **Results** column

Note: ***Round off queue lengths to the next highest 25 feet when reporting***

Input							Results
Approach	Lane Group, Code	Volume, veh/hr	% Heavy Vehicles	Conflicting Volume,veh/hr	Signal (0 or 1)	Left Turn Lane (0 or 1)	Queue Length Feet
EB	MNLTR	0					
EB	MNLR	0					
EB	MNL	0					
EB	MNR	0					
WB	MNLTR	60	2.0%	4287	0	0	**75**
WB	MNLR	60	2.0%	2614	0	0	**75**
WB	MNL	31	2.0%	1673	0	0	**100**
WB	MNR	29	2.0%	941	0	0	**75**
NB	MJL	0					
SB	MJL	19	2.0%	956	0	1	**75**

Queue Length Estimation at Two-Way STOP Controlled Intersection

Project Information

Analyst:	CJN	Agency/Co.:	W-Trans
Analysis Time Period:	Weekend Midday	Project ID:	NAX062
Date Performed:	5/30/2017	Scenario	PM Future + Project
Jurisdiction:	County of Napa		
Intersection:	SR 29/Lodi Ln		
East/West Street:	Lodi Ln		
North/South Street:	SR 29		

Instructions

Step 1 Input Volumes on **Volumes** sheet

Lane Group Code :			
	MJL	1	Major street separate left turn lane / TWLT
	MNLTR	2	Minor street shared left, through and right lane
	MNLR	3	Minor street shared left, and right lane
	MNL	4	Minor street separate left turn lane
	MNR	5	Minor street separate right turn lane

Step 2 Calculate Input Parameters

Calculate Lane Group Volumes, % Heavy Vehicles, and Conflicting Volumes (2.0% default)

Identify the presence of an upstream signal within 1/4 mile on major approches (Signal, 0 default)

Identify the presence of a separate LT lane / TWLT on major street approaches (LT, 1 default)

Verify the input ranges to feed into the models (see QueueLengthsModels sheet)

Step 3 **Obtain** queue lengths in feet from **Results** column

Note: ***Round off queue lengths to the next highest 25 feet when reporting***

Input							Results
Approach	Lane Group, Code	Volume, veh/hr	% Heavy Vehicles	Conflicting Volume,veh/hr	Signal (0 or 1)	Left Turn Lane (0 or 1)	Queue Length Feet
EB	MNLTR	0					
EB	MNLR	0					
EB	MNL	0					
EB	MNR	0					
WB	MNLTR	71	2.0%	4111	0	0	**75**
WB	MNLR	71	2.0%	2496	0	0	**75**
WB	MNL	38	2.0%	1615	0	0	**100**
WB	MNR	33	2.0%	881	0	0	**75**
NB	MJL	0					
SB	MJL	36	2.0%	896	0	1	**75**

Appendix G

Speed Survey Data

This page intentionally left blank

SPEED SURVEY CALCULATIONS Inn at the Abbey	
Roadway:	**SR 29**
Direction of Travel:	**SB**
Speed Samples:	41
	45
	54
	37
	39
	50
	45
	42
	34
	43
	41
	34
	44
	41
	48
	42
	50
	42
	52
	36
	41
	43
	37
	40
	41
Average Speed:	42.5
85th Percentile Speed:	**48.8**
High Speed:	54.0

*Note: All speeds in miles per hour (mph).

This page intentionally left blank

Appendix H

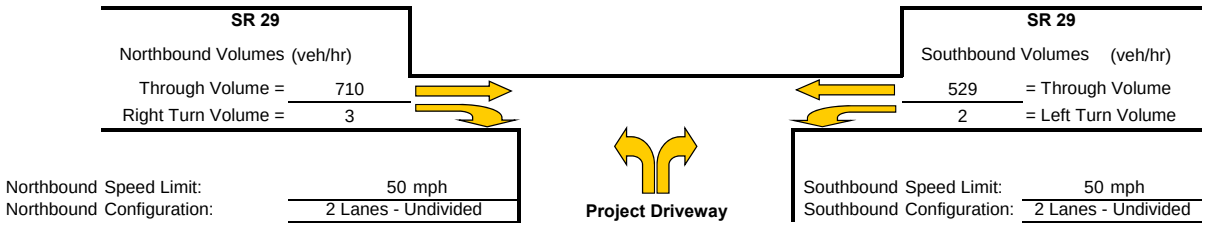
Turn Lane Warrants and Dimensions

This page intentionally left blank

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: PM Existing

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	713
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

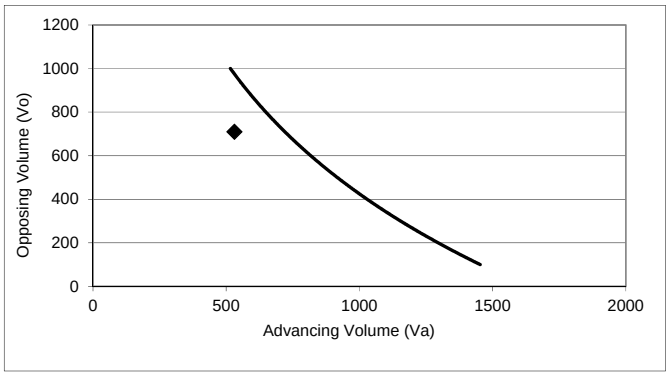
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	713
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.4 %
Advancing Volume Threshold	AV	720 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

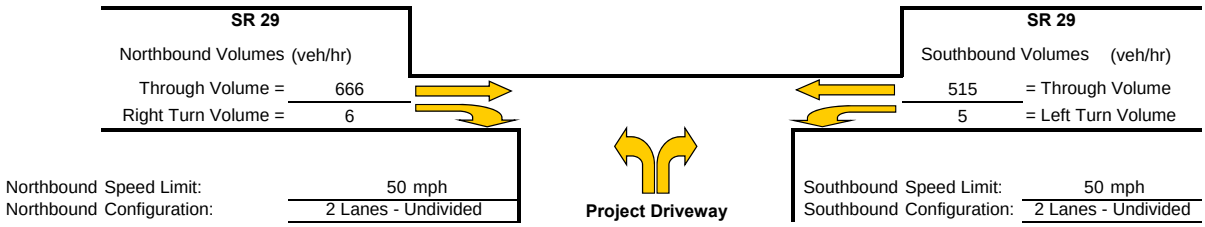
Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: Wknd Existing

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	672
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

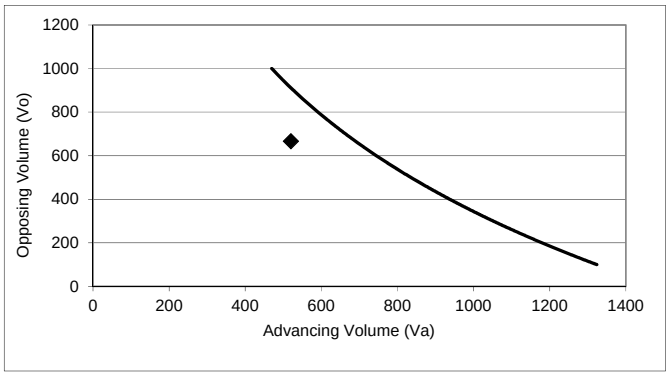
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	672
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	1.0 %
Advancing Volume Threshold	AV	690 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

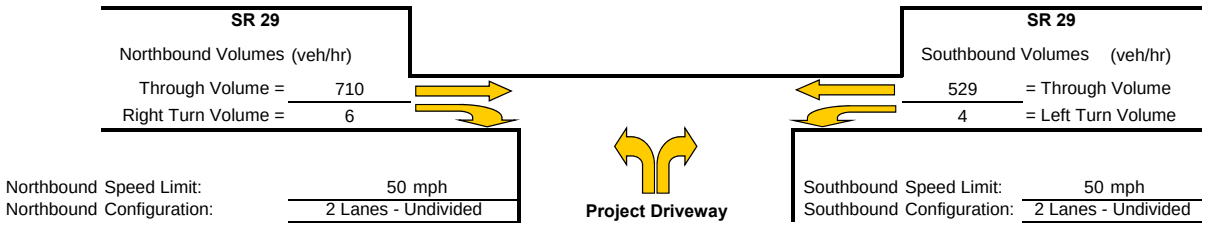
Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: PM Existing + Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	716
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

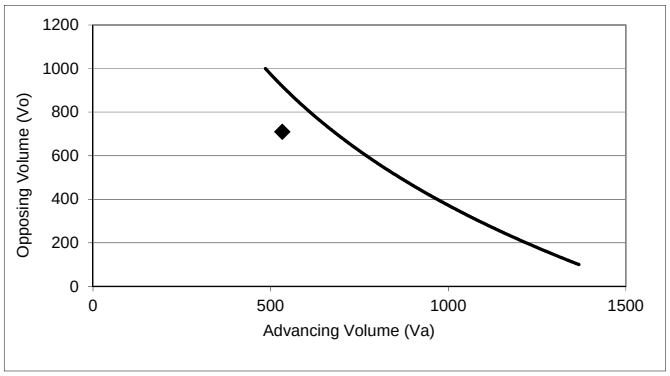
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	716
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.8 %
Advancing Volume Threshold	AV	678 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

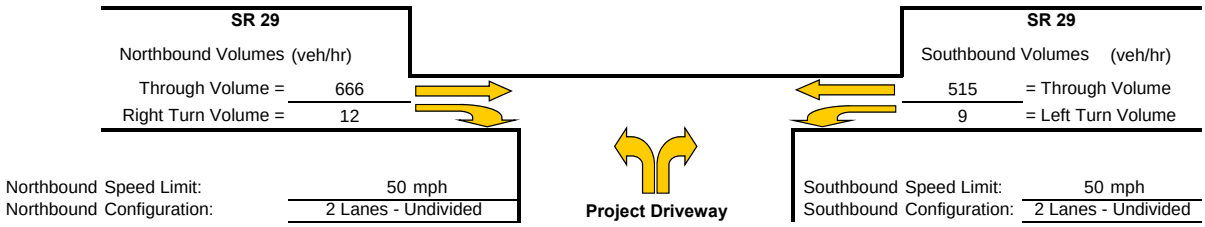
Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: Wknd Existing + Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	678
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

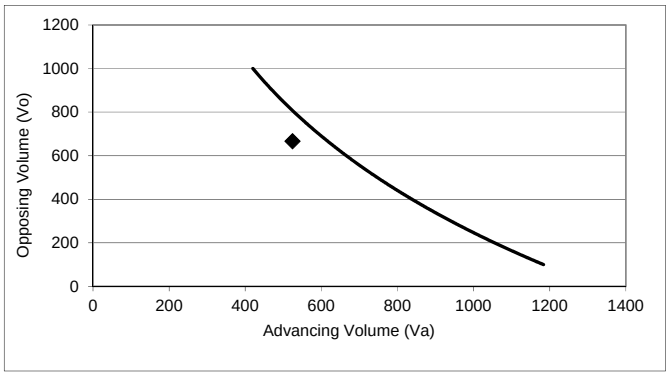
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	678
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	1.7 %
Advancing Volume Threshold	AV	617 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

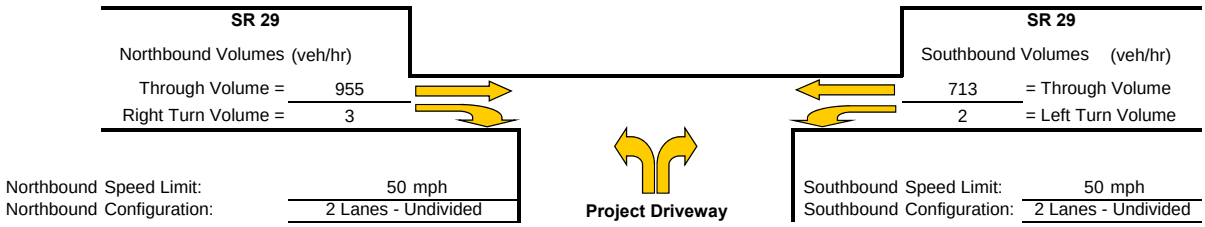
Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: PM Future

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	958
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

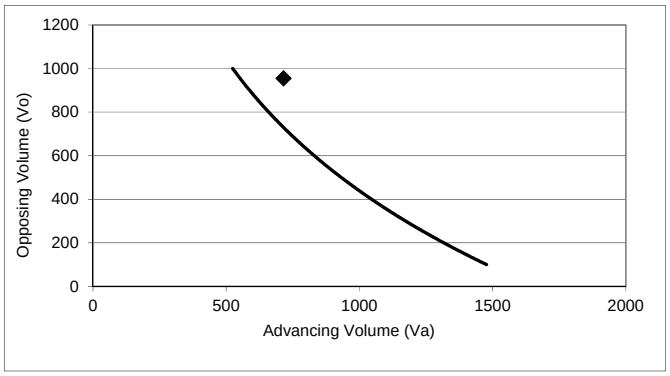
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	958
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.3 %
Advancing Volume Threshold	AV	552 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

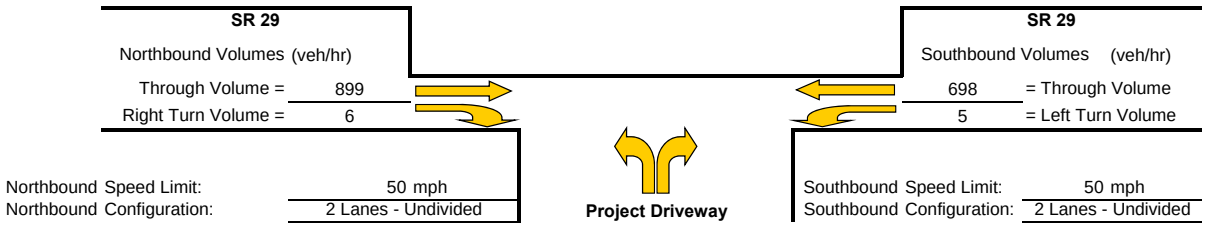
Left Turn Lane Warranted: **YES**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: Wknd Future

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	905
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

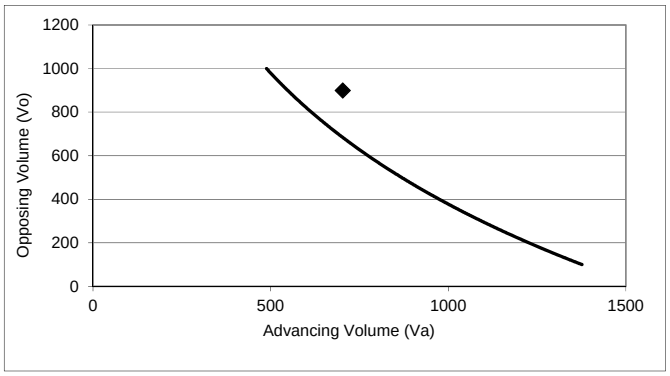
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	905
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.7 %
Advancing Volume Threshold	AV	549 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

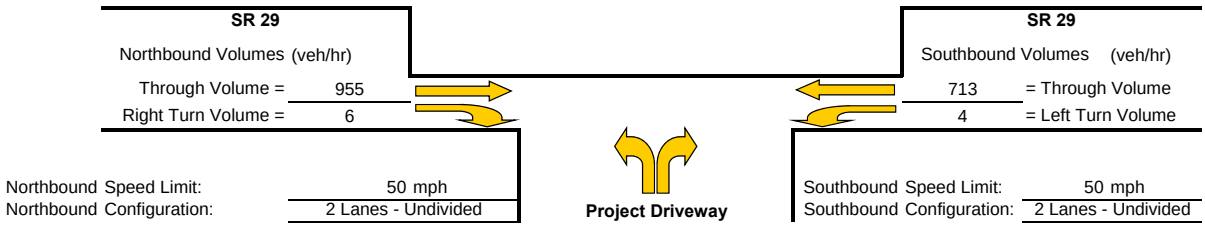
Left Turn Lane Warranted: **YES**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: PM Future + Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	961
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

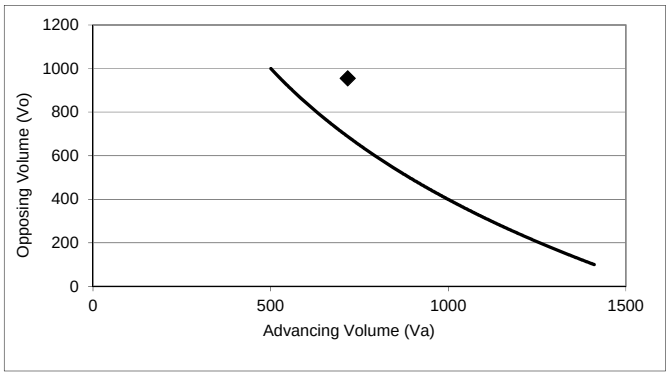
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	961
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.6 %
Advancing Volume Threshold	AV	527 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

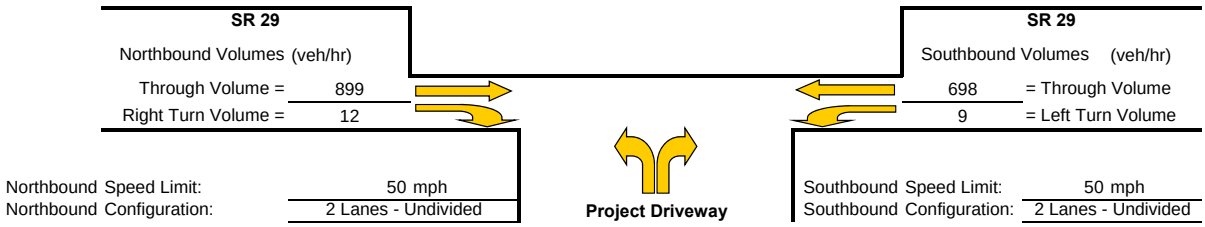
Left Turn Lane Warranted: **YES**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 29/Project Driveway
Study Scenario: Wknd Future + Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



Northbound Speed Limit: 50 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Speed Limit: 50 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	911
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

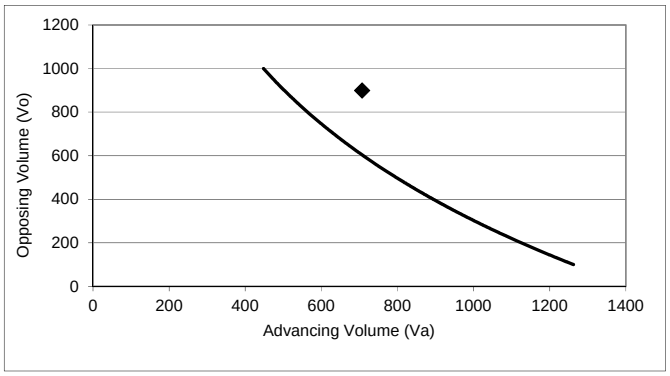
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	911
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns	%lt	1.3 %
Advancing Volume Threshold	AV	503 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 50 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **YES**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements* , January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Left Turn Channelization Dimensions

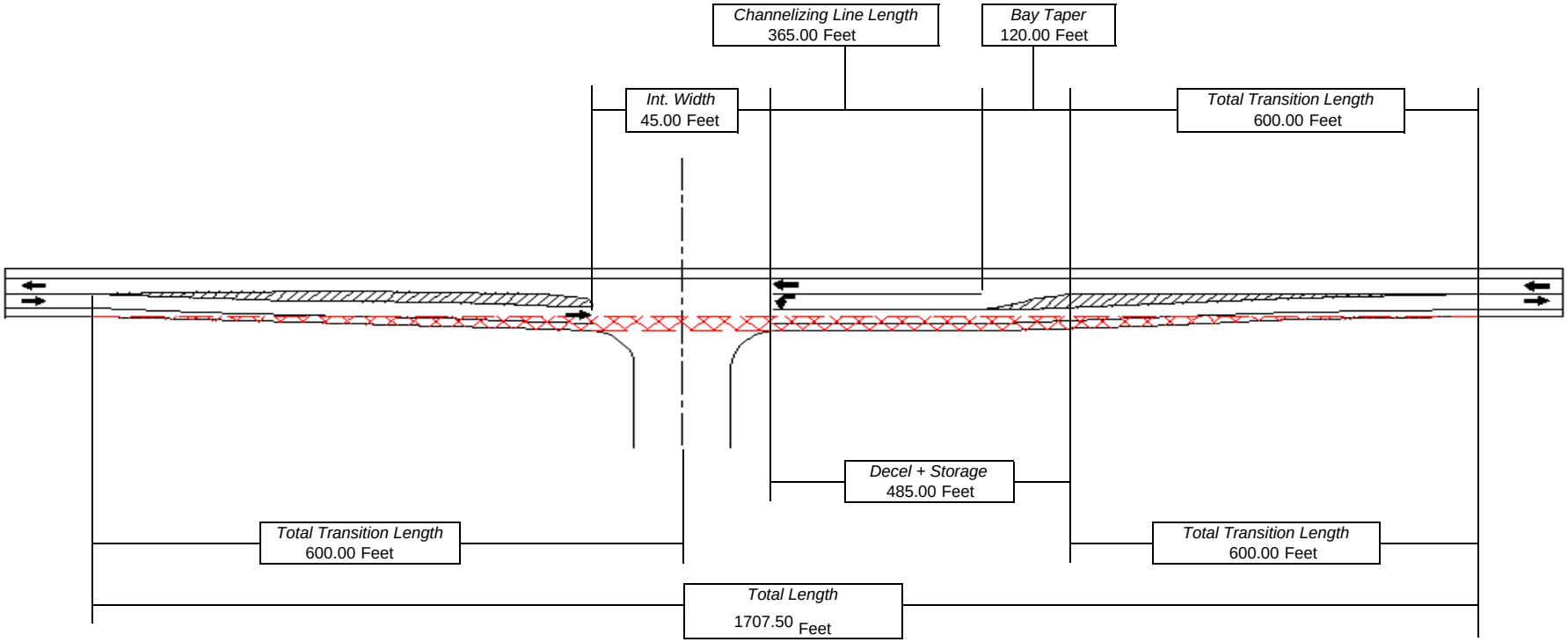
3 Leg Intersection - Widening on One Side for Rural, Semi-Rural and High Speed/Volume Urban Areas

Project Name: **Inn at the Abbey**

Location: **SR 29/Project Driveway**

Design Speed:	50 mph
Turn Pocket Width:	12.0 feet
Design Queue:	2 veh
Decelerate From:	50 mph
Intersection Width: *(Stopline to Stopline)*	45 feet
Bay Taper Length =	120 feet

Stacking Length =	50 feet
Deceleration =	435 feet
Transition =	600 feet
Total Length of Widening =	1708 feet
Area Of Widening=	11850 sf



This page intentionally left blank

Appendix I

Shared Parking Summary

This page intentionally left blank

SHARED PARKING SUMMARY

Inn at the Abbey
Hotel, Restaurant, and Retail Shared Parking Demand

July
Weekday Estimated Peak-Hour Parking Demand

Monthly Adj.	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	Overall Pk	AM Peak Hr	PM Peak Hr	Eve Peak Hr
																				12 PM	8 AM	12 PM	9 PM
TOTAL DEMAND	68	76	93	78	75	73	113	113	87	75	76	87	97	95	102	103	98	91	85	113	93	113	103
																				113	93	113	103

Footnote(s):

July
Weekend Estimated Peak-Hour Parking Demand

	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	Overall Pk	AM Peak Hr	PM Peak Hr	Eve Peak Hr
																				9 PM	8 AM	12 PM	9 PM
TOTAL DEMAND	76	83	96	80	74	74	113	113	88	77	80	90	103	105	113	115	109	103	96	115	96	113	115
																				115	96	113	115

Footnote(s):

Appendix M

Phase I Environmental Site Assessment Report

Environmental Risk Assessors

Phase I Environmental Site Assessment Report

Freemark Abbey Winery/Vineyard and
Alumbaugh Property
St. Helena Highway North and Lodi Lane
St. Helena, California 94574

December 23, 2021

Prepared for:

Jackson Family Investments, LLC
425 Aviation Boulevard
Santa Rosa, CA 95403

Prepared by:

Environmental Risk Assessors
5098 Foothills Boulevard
#3-146
Roseville, California 95747

ERA Project No. 01-2021-900-004

Environmental Risk Assessors

December 23, 2021

Mr. Geoff Scott
V.P., Real Estate
Jackson Family Investments, LLC
425 Aviation Boulevard
Santa Rosa, California 95403

SUBJECT: Phase I Environmental Site Assessment
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena Highway North and Lodi Lane
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Dear Mr. Scott,

Environmental Risk Assessors (ERA) is pleased to present this Phase I Environmental Site Assessment (Phase I ESA) Report for the above-referenced property (the Site).

The Phase I ESA was conducted in general accordance with the processes prescribed in the American Society for Testing Materials International (ASTM) E 1527-13 guidelines and the Code of Federal Regulations (CFR) 40 CFR Part 312 "Standards and Practices for All Appropriate Inquiries: Final Rule." The primary purpose of this assessment was to identify recognized environmental conditions (RECs) in connection with the Site. Our scope of work and findings are presented in the attached Phase I ESA Report.

It has been a pleasure working with you on this project. Please do not hesitate to contact me via email at litafreeman@gmail.com or telephone at (916) 677-9897 if you have any questions or comments regarding this assessment.

Sincerely,

Environmental Risk Assessors

Lita D. Freeman, PG
Professional Geologist

5098 Foothills Boulevard
Suite 3-146
Roseville, California 95747

Tel 916-677-9897
litafreeman@gmail.com

Table of Contents

1. EXECUTIVE SUMMARY 1

1.1 On-Site Findings 2

1.2 Off-Site Findings 3

1.3 Opinion 3

1.4 Limiting Factors/Data Gaps 4

1.5 Conclusions 4

1.6 Recommendations 4

2. INTRODUCTION 4

2.1 Purpose 5

2.2 Detailed Scope of Services 5

2.3 Significant Assumptions 5

2.4 Limitations and Exceptions 5

2.5 Special Terms and Conditions 7

2.6 User Reliance 7

2.7 Qualifications 7

3. SITE SETTING 7

3.1 Site Location and Description 7

3.2 Adjacent Property Use 8

3.3 Topography, Geology, Hydrogeology 8

4. User-Provided Information 10

4.1 Title Record 10

4.2 Environmental Liens or Activity and Use Limitations 11

4.3 Specialized Knowledge 11

4.4 Environmental Questionnaires/User-Provided Documents 11

5. SITE HISTORY 11

5.1 Aerial Photographs 14

6. REGULATORY AGENCY RESEARCH 14

6.1 Regulatory Database Research 15

6.1.1 Site 16

Table of Contents

6.1.2 Off-Site Properties 17

6.1.3 Orphan Properties 17

6.1.4 Vapor Encroachment Condition 17

6.2 Agency Research 18

6.3 Radon 20

7. PREVIOUS ENVIRONMENTAL REPORTS 21

8. SITE RECONNAISSANCE 21

8.1 Methodology and Limiting Conditions 21

8.2 Site Description 21

9. INTERVIEWS 24

10. FINDINGS 24

10.1 On-Site Findings 24

10.2 Off-Site Findings 25

11. OPINION 25

11.1 Known or Suspect Recognized Environmental Conditions 26

11.2 Known or Suspect Controlled Recognized Environmental Conditions 26

11.3 Known or Suspect Historical Recognized Environmental Conditions 26

11.4 De Minimis Conditions 26

12. CONCLUSIONS 26

13. RECOMMENDATIONS 26

14. DEVIATIONS/DATA GAPS 27

15. ADDITIONAL SERVICES 27

16. REFERENCES 27

Tables

1 General Site Information (*embedded in text*)

2 Site Vicinity Reconnaissance (*embedded in text*)

3 Site Setting (*embedded in text*)

4 Historical Information Reviewed/Agency Records Summary (*embedded in text*)

5 Regulatory Agency Databases/Lists Reviewed (*embedded in text*)

6 Agency Files/Records Summary (*embedded in text*)

7 Site Observations (*embedded in text*)

8 Interviews (*embedded in text*)

Figures

1 Site Location Map

2 Site Plan

3 Site Plan – Freemark Abbey Winery

4 Site Plan – Alumbaugh Property

Appendices

A Site Photographs

B Regulatory Agency Documentation

C User-Provided Documentation

D Historical Research Documentation

E EDR Radius Map Report

1. EXECUTIVE SUMMARY

Environmental Risk Assessors (ERA) is pleased to present this Phase I Environmental Site Assessment (ESA) Report (the "Report") to Jackson Family Investments, LLC (JFI) for the approximately 15-acre property located east of St. Helena Highway (Highway 29) at the intersection of Lodi Lane in St. Helena, Napa County, California (the "Site"; Figure 1). The Site consists of six parcels assigned 13 street addresses and is currently developed with commercial and residential structures and cultivated land (vineyard) (Site Plans; Figures 2 through 4). Structures, addresses, and Napa County Assessor Parcel Numbers (APNs), are as follows:

Address	Year Built	Structure/Use	APN
Freemark Abbey Winery and Vineyard			
3018, 3020, 3024 St. Helena Hwy North	1906 (est.)	Freemark Abbey Winery/ Original Winery / Wine Tasting	022-130-020-000 (formerly 022-130-027-000)
3010 St. Helena Hwy North	1972	Commercial Building (with basement) / Wine Tasting	022-130-021-000 (formerly 022-130-028-000)
3022 St. Helena Hwy North	1972/1973	New Winery Building	022-130-023-000
	Before 1980	Cottage	
	1971	Pump House/Water Tank	
1160 Lodi Lane	1980	Commercial Building / Offices	022-130-024-000
	Late 1990s/ Early 2000s	Maintenance Shop	
	--	Vineyard	
Alumbaugh Property			
3000 St Helena Hwy North	1946	Commercial Building/Retail, Offices, Wine Tasting	022-220-028-000
1190 York Lane	2003-2004	Residence	
	Before 1947	Building Supply / Storage Shed	
XXX Lodi Lane	Unknown	Residence in area of duplex	022-220-029-000
1157/1159 Lodi Lane	1962/1963	Duplex	
1165 Lodi Lane	1954	Residence	
1179 Lodi Lane	1982	Residence	
1181 Lodi Lane	1964/1965	Residence	
1183 Lodi Lane	1938 (est.)	Motel / Apartment Building	
1189 Lodi Lane	1936	Cabin	
1199 Lodi Lane	1900 (est.)	Residence	
1199 Lodi Lane	Before 1947	Cabin	
XXX Lodi Lane	Before 1947	Barn	

The objective of the Phase I ESA was to identify recognized environmental conditions (RECs) in connection with the Site, to the extent feasible pursuant to the processes prescribed in the American Society for Testing Materials International (ASTM) E 1527-13 document entitled "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" approved November 1, 2013, and the U.S. Environmental Protections Agency's All Appropriate Inquires (AAI) Final Rule (at Code of Federal Regulations [CFR] 40 CFR Part 312) of November 1, 2005 as amended December 30, 2013.

1.1 On-Site Findings

The following information was obtained by ERA from review of regulatory agency files and databases, or site observations, and interviews. Interiors of the commercial buildings at 3010 N. St. Helena Highway and 3000 N. St. Helena Highway, residential buildings at 1157/1159, 1165, 1179, and 1181 Lodi Lane, and residences at 1190 York Lane were not accessible.

- Based on review of available historical resources, the Site was developed by 1900/early 1900s with the Freemark Abbey Winery building on the Site's northern portion and a residential structure ("the Old Victorian") on the Site's southern portion. By the late 1930s to mid-1940s, a smaller building had been constructed east of the Freemark Abbey Winery building and numerous structures had been constructed on the Site's southern portion, including the commercial building at 3000 St. Helena Highway North, a commercial building ("Builder's Supply" structure), a residential structure in area now occupied by the duplex, the western portion of the motel/apartment building, two small structures ("Cabins"), and a barn-like structure ("Barn"). The motel/apartment building was expanded and residential structures were constructed immediately south of Lodi Lane in the 1950s and 1960s; the residences at 1179 Lodi Lane and 1190 York Lane were constructed in 1982 and 2003/2004, respectively. The Pump House and Water Tank, the commercial building at 3010 St. Helena Highway North, and the New Winery building were constructed on the Site's northern portion in the 1970s. The Cottage was constructed on the Site's northern portion sometime before 1980, the Office Building was constructed in 1980, and the "Builder's Supply" structure was demolished by 1982. By the mid-2000s, the Site appeared generally as it does today with construction of the Maintenance Shop (late 1990s/early 2000s) and planting of vineyards on the Site's northern portion and demolition of the Old Victorian, Barn, and Cabins by 2006. The Site has remained essentially unchanged since the late 1990s.
- Structures observed on site during ERA's site visit were: Freemark Abbey Winery building, New Winery Building, two commercial buildings (3000 and 3010 St. Helena Highway North), the Office Building, the Maintenance Shop, the Cottage, the Pump House and Water Tank, the Shed, the duplex, Motel/Apartment Building, and four residences. Several water storage aboveground storage tanks (ASTs), a diesel AST at the Pump House/Water Tank, and an emergency generator with a 784-gallon double-walled steel belly tank for diesel storage were also observed on site. No evidence of staining was observed around these structures. Cultivated land (vineyards) was present on the Site's northern portion and open space was present on the Site's southern portion.
- Four water-supply wells were observed on site with two additional wells possibly located on the Site's southern portion (based on ERA's review of documents from regulatory agencies).
- The on-site structures are served by septic systems. No significant environmental concerns were noted with the systems based on discharge of only winery process and domestic wastewater to the systems.
- According to Environmental Data Resources, Inc. (EDR) and ERA's review of online databases, the Site has been included in various regulatory agency databases reviewed for this assessment, as follows: Facility Index System (FINDS) and California Environmental Reporting System (CERS) for air monitoring station for ambient air pollution data; FINDS for a waste discharge facility; FINDS, Enforcement & Compliance History Information (ECHO), California Integrated Water Quality System (CIWQS), National Pollution Discharge Elimination System (NPDES), CERS, and Waste Discharge System (WDS) for an industrial stormwater permit; Hazardous Waste Tracking System (HWTS) for hazardous waste manifests; ECHO, Resource Conservation and Recovery Act (RCRA), and RCRA

Former Hazardous Waste Generators/No Longer Regulated Sites (RCRA NonGen/NLR) as a former hazardous waste generator; Facility and Manifest Data (HAZNET) and HWTS (disposal of asbestos-containing waste and organics); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA) Tracking System (FTTS) for pesticide use; and Napa County Leaking Underground Storage Tank (LUST) as an open Local Oversight Program case with the Napa County Planning, Building, and Environmental Services Department Environmental Health Division (NCEHD).

Discussions with NCEHD staff indicated that no records related to this case were available. NCEHD reportedly opens a case when notified that an underground storage tank (UST) is discovered at a property. According to NCEHD staff, if no impacts or minimal impacts are noted during the UST removal then NCEHD will change the status from an open LOP case to a closed LOP case. Since no file was located for the Site, NCEHD staff assumes that no impacts or minimal impacts were encountered at the Site and the NCEHD will change the status of the Site's LOP case to "Closed" and will update the database.

The Site's inclusion on the above noted databases does not appear to present a significant environmental concern to the Site.

1.2 Off-Site Findings

- The surrounding areas were predominantly developed with residences or used for agricultural purposes (predominantly vineyards) in the past with scattered structures and vineyards present currently.
- According to EDR, no facilities were identified in regulatory agency databases within the ASTM search distances that would present a significant environmental concern to the Site.
- Regulated properties that could not be located because of insufficient address information are referred to by EDR as "orphan" facilities. No orphan properties were identified by EDR in the site vicinity.

1.3 Opinion

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. ERA did not identify *RECs* during the course of this assessment.

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. ERA did not identify *CRECs* during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. ERA did not identify *HRECs* during the course of this assessment.

A *de minimis* condition is a condition that generally does not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. ERA did not identify a *de minimis* condition during the course of this assessment except for *de minimis staining in the parking lots*.

1.4 Limiting Factors/Data Gaps

The following limiting factors were documented during this assessment: a 50-year chain-of-title report was not provided to ERA for review, intervals between aerial photographs/topographic maps were more than 5 years; the interiors of the commercial buildings at 3010 N. St. Helena Highway and 3000 N. St. Helena Highway, residential buildings at 1157/1159, 1165, 1179, and 1181 Lodi Lane, and residences at 1190 York Lane were not accessible during ERA's site visit, surface soil could not be observed in some on-site areas because of thick vegetation and due to the size of the Site, and lack of analytical data on soil quality.

These limiting factors represent data gaps but do not represent significant data gaps and are unlikely to impact ERA' ability to identify RECs. Based on information obtained by ERA during our review of historical sources and observation of site conditions during our visit, these limiting factors would not appear to be significant and we do not anticipate that the information that could be obtained from these sources would change the conclusions of this report.

1.5 Conclusions

ERA has performed this assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 for Phase I ESAs.

Based on available information, RECs, CRECs, or HRECs were not identified at the Site.

1.6 Recommendations

Based on the findings of this Phase I ESA, no further assessment appears warranted at the Site.

Construction details of the diesel AST at the Pump House/Water Tank were not available. As a best management practice, consideration should be given to providing secondary containments for the diesel AST if the diesel AST is not of double-walled construction to help prevent impacts to surrounding soil in the event of a release from the AST.

If future plans do not include the use of one or more of the water-supply well(s), the well/wells should be destroyed in accordance with local and state regulations.

Based on the ages of the on-site buildings, surveys for asbestos-containing materials (ACMs) and lead-based paint (LBP) will be necessary if renovations or demolition of the buildings are planned. If the LBP survey identifies that LBP were used on exterior walls, collecting and analyzing soil samples from around the building(s) should be considered to evaluate if lead has impacted soil.

2. INTRODUCTION

ERA is pleased to present this Phase I ESA Report to JFI for the approximately 15-acre property located east of St. Helena Highway (Highway 29) at the intersection of Lodi Lane in St. Helena, Napa County, California (the "Site"; Figure 1). The Site consists of six parcels assigned 13 street addresses and is currently developed with commercial and residential structures with cultivated (vineyard) and vacant portions (Site Plans; Figures 2 through 4). See Section 3.1 for existing development, street addresses, Napa County APNs, and acreage.

This assessment included review of information gathered from federal, State of California ("the State"), and local regulatory agencies, a site visit conducted by ERA staff, and evaluation of data for soil samples collected from the Site. The findings and conclusions presented in this Report are based on the results of a reconnaissance-level site visit, review of regulatory records, our review of available and pertinent background information, and evaluation of analytical data.

2.1 Purpose

JFI requested that ERA conduct a Phase I ESA of the Site to facilitate their evaluation of the Site for potential environmental concerns.

The purpose of this assessment has been to identify RECs in connection with the Site to the extent feasible pursuant to the processes prescribed in ASTM's "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM Designation E 1527-13) approved November 1, 2013, and CFR 40 CFR Part 312 "Standards and Practices for All Appropriate Inquiries: Final Rule" of November 1, 2005, as amended December 30, 2013. RECs, as defined by ASTM Standard Practice E1527-13, are the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or the material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

The term includes the presence or release of hazardous substances or petroleum products that occur under conditions that are in compliance with environmental laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. *De minimis* conditions are not RECs.

ASTM Standard Practice E1527-13 includes an evaluation of vapor encroachment potential.

2.2 Detailed Scope of Services

This Phase I ESA conducted by ERA included, but was not limited to, the following services:

- Conducting a reconnaissance-level site visit to look for visual evidence of the release(s) of hazardous materials and/or petroleum products, and to assess the potential for on-site releases of hazardous materials and/or petroleum products;
- Conducting a drive-by reconnaissance of adjacent properties and the site vicinity;
- Reviewing regulatory agency files;
- Reviewing historical documents; and
- Preparing this Report presenting our findings, including conclusions and recommendations, as warranted.

2.3 Significant Assumptions

The purpose of the assessment is to provide appropriate inquiry into the ownership and use of the Site, consistent with good commercial and customary practice, in an effort to minimize liability. ERA assumes that the information provided by JFI, the regulatory database provider, and the regulatory agencies is correct, true and reliable.

2.4 Limitations and Exceptions

The opinions and recommendations presented in this Report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ERA and the party for whom this report was originally prepared. This Report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that ERA relied upon any information prepared by other parties

not under contract to ERA, ERA makes no representation as to the accuracy or completeness of such information.

This Report is expressly for the sole and exclusive use of the parties for which this Report was originally prepared for a particular purpose. Only the parties for which this Report was originally prepared and/or other specifically named parties, may make use of and rely upon the information in this Report, in its entirety, for a period not to exceed 180 days in accordance with ASTM's "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" ASTM Designation E 1527-00 dated May 10, 2000, ASTM's "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" ASTM Designation E 1527-13 approved November 1, 2013, and/or 40 CFR Part 312 "Standards and Practices for All Appropriate Inquiries: Final Rule" of November 1, 2005 as amended December 30, 2013. After 180 days, and prior to using the information contained herein, the report should be updated in accordance with ASTM standards and federal regulations. Reuse of this Report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties without proper authorization, shall be at the user's sole risk.

The findings presented in this Report apply solely to site conditions existing at the time when ERA's assessment was performed. It must be recognized, however, that a Phase I ESA is conducted for the purpose of evaluating the potential for contamination through limited research and investigative activities and in no way represents a conclusive or complete site characterization. Conditions in other parts of the project Site may vary from those at the locations where data were collected. ERA's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. Therefore, 100 percent confidence in Phase I ESA conclusions cannot reasonably be achieved.

ERA, therefore, does not provide any guarantees, certifications, or warranties that a property is free from environmental contamination. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

The following limiting factors were documented during this assessment:

- Lack of a 50-year chain-of-title report;
- Intervals between aerial photographs/topographic maps were more than 5 years;
- Lack of access to the interiors of two commercial buildings (3000 and 3010 St. Helena Highway North) and residential buildings (1157/1159, 1165, 1179, and 1181 Lodi Lane, and 1190 York Lane) were not accessible during ERA's site visit;
- Inability to observe surface soil in some areas because of thick vegetation; and
- Lack of analytical data on soil quality at the Site.

These limiting factors represent data gaps but do not represent significant data gaps and are unlikely to impact ERA's ability to identify RECs. Based on information obtained by ERA during our review of historical sources and observation of site conditions during our visit, these limiting factors would not appear to be significant and we do not anticipate that the information that could be obtained from these sources would change the conclusions of this report.

It is unlikely that environmentally persistent pesticides such as DDD were used on site in the past as these types of pesticides were banned in the 1970s and cultivation of the Site's northern portion began in the late 1980s/early 1990s. Use of agricultural chemicals would not appear to be a significant environmental concern and ERA does not anticipate that information that could be

obtained from soil quality data would change the conclusions of this report based on the anticipated continued commercial use of the Site's northern portion.

Pertinent data, if any, obtained by the Client following the issuance of this report should be reviewed by an environmental professional and an addendum prepared presenting an evaluation of the data and any changes to the conclusions of this report, as warranted by the data.

2.5 Special Terms and Conditions

The scope of work for this Phase I ESA was presented in the contract dated November 4, 2021.

The scope of work for this assessment did not include testing of electrical equipment for the potential presence of polychlorinated biphenyls (PCBs) or the assessment of natural hazards such as naturally occurring asbestos, radon gas, or methane gas, assessment of the potential presence of radionuclides, or assessment of non-chemical hazards such as the potential for damage from earthquakes or floods. This Phase I ESA also did not include an extensive assessment of the environmental compliance status of the Site or of the businesses operating at the Site, an assessment of the potential for vapor intrusion, or a health-based risk assessment.

2.6 User Reliance

This Report is for the exclusive use of the parties for which it was prepared, their agents, and assignees, and for such other parties as ERA agrees may rely on the Report. Use of this Report by any other party shall be at such party's sole risk.

2.7 Qualifications

A summary of the ERA personnel who worked on this project follows:

- Ms. Lita Freeman, California Professional Geologist and California Asbestos Consultant, has over 25 years of experience providing site assessment services. This has included evaluating potential property impacts from historical on- and off-site operations, conducting subsurface investigations, and implementing site remediation plans. Ms. Freeman works with property owners, attorneys, and regulators to mitigate and resolve environmental issues.

3. SITE SETTING

3.1 Site Location and Description

General site information is presented in Table 1.

Table 1. General Site Information

Project Name: Freemark Abbey Winery/Vineyard and Alumbaugh Property	**Owner:** JFI
Address(es): See below	**Past/Additional Address(es):** None identified
County: Napa	**APN(s):** see below
Property Size: 15 acres	**Current Use:** Commercial, residential, agricultural
Property Manager/Contact Information: Geoff Scott, JFI	
Occupant(s): Freemark Abbey Winery, JFI, and individual residential tenants	
Heating and Cooling Equipment: Electricity/natural gas provided by Pacific Gas and Electric Company	
Domestic Water Provider: On-site water-supply wells and City of St. Helena	
Sanitary Sewer: On-site septic systems	

Existing development, street addresses, Napa County APNs, and acreage are as follows:

- Freemark Abbey Winery Building, 3018, 3020, 3024 St. Helena Highway North, APN 022-130-020-000 (formerly 022-130-027-000), 1.34 acres;
- Commercial Building / Vacant, 3010 St. Helena Highway North, APN 022-130-021-000 (formerly 022-130-028-000), 0.5 acres;
- New Winery, Cottage, and Pump House with Water Tank, 3022 St. Helena Highway North, APN 022-130-023-000, 3.11 acres;
- Office Building and Maintenance Shop, 1160 Lodi Lane, APN 022-130-024-000, 5.32 acres;
- Residential (five residences), 1157, 1159, 1165, 1179, 1181 Lodi Lane, APN 022-220-029-000, 1.34 acres; and
- Residential (one residence) - 1190 York Lane, Commercial Building - 1189 Lodi Lane, Commercial Building - 3000 St. Helena Highway North, APN 022-220-028-000, 3.45 acres.

Photographs of the Site are included in Appendix A.

3.2 Adjacent Property Use

ERA staff performed a drive-by and walk-by reconnaissance of adjacent properties from public areas (e.g. sidewalks) to observe current businesses or land uses that may use, store, generate, or dispose of hazardous materials. Current activities at the adjacent properties do not appear to be of potential environmental concern to the Site based on the observations during the reconnaissance. Specific observations of adjacent property use are presented in Table 2.

Table 2. Site Vicinity Reconnaissance

Direction	Land Use
North	Residences and agricultural land (vineyards) with scattered residences and agricultural land (vineyards) farther north
East	Residences and a hotel (Wine Country Inn, 1152 Lodi Lane) with residences and agricultural land (vineyards) farther east
South	Residences and agricultural land (vineyards) with residences and agricultural land (vineyards) farther south
Southwest	St. Helena Highway (Highway 29) with residences and agricultural land (vineyards) and wooded areas farther southwest
West	St. Helena Highway (Highway 29) with Vista del Valle trailer park (3043 St. Helena Highway North), residences, agricultural land (vineyards), and wooded areas farther west

3.3 Topography, Geology, Hydrogeology

Information on topography was obtained from the United States Geological Survey (USGS) 7.5-Minute Series Topographic Maps of the St. Helena and Calistoga, California Quadrangles dated 2018, and the regional and local surface hydrology, geology, and hydrogeology information was obtained from various sources. Information on topography, regional and local surface hydrology, geology, and hydrogeology is presented in Table 3.

Table 3. Site Setting	
Topography	The Site's topography slopes slightly downward from the western portion of the Site with elevations ranging from about 315 feet above mean sea level (amsl) at the high point on the Site's northwestern corner to about 260 feet amsl on the Site's southeastern border.
Surface Features	The majority of the Site is developed with hardscape (buildings and paved parking lots) with a vineyard on a portion of the Site (between the Maintenance Shop and Lodi Lane) and vacant land on the southeastern portion of the Site. Structures on the Site's northern portion consist of commercial buildings (two winery buildings, a former restaurant, a cottage, an office building, a maintenance shop, a shed, and a pump house) and structures on the Site's southern portion consist of one commercial building and numerous residential buildings. One large and at least two small water storage tanks are located on the southern portion of the Site. One emergency generator is located on the Site's northern portion. Storm water infiltrates into the ground or flows across the ground and pavement surfaces to storm drains on the Site and in adjacent streets. According to available information from EDR, the Site is not located within the Federal Emergency Management Agency (FEMA) 0.2% Annual Chance Flood Hazard (500-year) zone or FEMA 1% Special Flood Hazard Area (100-year) zone. However, the FEMA flood map (see Appendix B) shows the eastern tip of the Alumbaugh Property within the 0.2% Annual Chance Flood Hazard (500-year) zone. Wetlands have not been mapped on the Site. A copy of the National Wetland Inventory Map is presented in Appendix B. The nearest surface water is the Napa River located approximately 1,200 feet northeast of the Site.
Regional Geology	The Site is located within the Coast Ranges Geomorphic Province. The Coast Ranges of California have elevations of up to 6,000 feet and extend 550 miles along its coast. These ranges consist of a string of north-south oriented valleys and ridges positioned along a series of faults and folds. The Preliminary Geologic Map of the Calistoga 7.5' Quadrangle (Delattre et al, 2013), show that the Site is underlain by rocks of the Sonoma Volcanics and the Franciscan Complex. The Sonoma volcanic rocks are very well developed in Napa County. These rocks are a diverse collection of volcanic rocks of varying composition and include many silica-rich volcanic rocks that represent the product of explosive eruptions and deposition from a hot volcanic cloud (pyroclastic deposits). Franciscan Complex rocks include sandstone, shale, and conglomerate. Rocks of the unit are broken, locally sheared, and weakly reconstituted.

Table 3. Site Setting	
Local Geology	The U. S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS; HTTP://WEBSOILSURVEY.NRCS.USDA.GOV) website was accessed for a *Custom Soil Resource Report*. According to the NRCS, near surface soils on site are as follows: 1) Perkins gravelly loam (169) located the Site's northern portion (Freemark Abbey Winery) and part of the Site's southern portion (northern part of the Alumbaugh Property); this soil is on 5 to 9% slopes and is described as well-drained soil consisting of gravelly loam and gravelly clay loam with parent material that is alluvium derived from igneous rock; 2) Perkins gravelly loam (168) located on the Site's southern portion (southern part of the Alumbaugh Property); this soil is on 1 to 10% slopes and is described as well-drained soil consisting of gravelly loam and gravelly clay loam with parent material that is alluvium derived volcanic and sedimentary rock; and 3) Bale clay loam (104) located on the eastern tip of the Alumbaugh Property (east of the duplex at 1157/1159 Lodi Lane); this soil is on 0 to 2% slopes and is described as somewhat poorly drained soil consisting of clay loam and gravelly sandy loam to loam with parent material that is alluvium derived from rhyolite and/or alluvium derived from igneous rock A copy of the NRCS report is presented in Appendix B.
Hydrogeology	Groundwater was reportedly encountered at depths of approximately 4.5 feet to 6 feet bgs during a soil and groundwater investigation at the St. Helena Forest Fire Station located approximately 1.7 miles north of the Site at 3535 Highway 29 in St. Helena (Versar, 2011a). According to depth-to-water measurements collected in September, 2011, from groundwater monitoring wells installed on the St. Helena Forest Fire Station property, groundwater flow direction was inferred to be towards the northeast (Versar, 2011b). Four water-supply wells are located on site; however, depth-to-water measurements were not available for these wells. Groundwater flow beneath the Site is assumed to follow regional surface topography, which is downward to the northeast-east towards the Napa River. Actual local groundwater flow direction can be influenced by factors such as local surface topography, underground structures, seasonal fluctuations, soil and bedrock geology, and production wells, none of which were considered during this study.
Wells	According to the *Water System Feasibility Study* (RSA, 2020), four water-supply wells are located on site and are referred to as the *Abbey Well*, the *Vineyard Well*, the *Alumbaugh Well,* and the *Old Well*. RSA noted that the Abbey Well was drilled in 1978 to a depth of 300 feet, the Vineyard Well was drilled in 1996 to a depth of 425 feet, and the Alumbaugh Well (on parcel 022-220-029) was drilled in 1997 to a depth of 400 feet. Construction details for the Old Well (on parcel 022-220-028) were not available but RSA noted that this well is no longer in use. Elevated arsenic levels (above the U.S. EPA Maximum Contaminant Level) have been reported in the Vineyard Well (RSA, 2020) with water from this well blended with water from the Abbey Well and City of St. Helena water to reduce the arsenic levels and water from the Alumbaugh Well is routed through iron and manganese filters for treatment. No oil and gas wells were observed on site during the site visit.

4. User-Provided Information

4.1 Title Record

ERA was not provided with a 50-year chain-of-title report by JFI.

4.2 Environmental Liens or Activity and Use Limitations

There were no environmental liens or activity or use limitations documentation provided for this report based on review of the SWRCB Geotracker database and DTSC ENVIROSTOR database. These databases did not indicate that environmental liens or activity or use limitations had been filed against the Site.

4.3 Specialized Knowledge

JFI's representatives had specialized knowledge of the Site and provided ERA with various documents, as summarized in Sections 4.4, 7, and 8.

4.4 Environmental Questionnaires/User-Provided Documents

The Phase I Environmental Site Assessment Questionnaire (the "Questionnaire") was completed by Mr. Geoff Scott, Vice President of Real Estate for JFI, the property owner, and returned to ERA. In the Questionnaire, Mr. Scott noted the following:

- Mr. Scott has been associated with the Site for 10 years;
- Mr. Scott is not aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law; is not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Site; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the Site; or any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products at the Site;
- Mr. Scott is not aware of any activity or land use limitations, such as engineering controls (for contaminant control), land use restrictions or institutional controls, that are in place at the Site and/or have been filed or recorded in a registry under federal, tribal, state or local law;
- Mr. Scott noted that a winery, restaurant, motel, tasting room, residences, offices, vineyards, and an art gallery have been located on site;
- Mr. Scott is not aware of chemical spills on the Site, environmental cleanups at the Site, or fill material present on site; and
- Based on his knowledge and experience related to the Site, Mr. Scott is not aware of obvious indicators that point to the presence or likely presence of contamination on site.

A copy of the completed questionnaire is presented in Appendix C.

5. SITE HISTORY

Historical information obtained during this Phase I ESA is summarized in Table 4. Copies of supporting documents are presented in Appendix D.

Table 4: Historical Information Reviewed/Agency Records Summary

Source	Date	Information Obtained
Sanborn® Fire Insurance Maps	September 2021	EDR searched their collection of Sanborn® Fire Insurance Maps for maps of the site vicinity. Sanborn maps are not available for the site vicinity indicating that the area was not considered a "high" fire risk for insurance purposes.

Table 4: Historical Information Reviewed/Agency Records Summary		
Source	**Date**	**Information Obtained**
Aerial Photographs	1947, 1952, 1958, 1968, 1970, 1973, 1982, 1993, 2006, 2009, 2012, 2016	See discussion below.
Topographic Maps	1942/1943, 1945, 1958/1960, 1959/1960, 1980, 1993, 1997, 2012	No structures are depicted on the Site on the 1942/1943 and 1945 maps except the Freemark Abbey Winery building; railroad tracks are depicted along the southeastern portion of the Site. The Freemark Abbey Winery building and a small building in the area of the New Winery building are depicted on the Site's northern portion and five structures are depicted on the Site's southern portion on the 1958/1960 and 1959/1960 maps. On the 1980 map the Freemark Abbey Winery building and the New Winery building are depicted on the Site's northern portion and five structures are depicted on the Site's southern portion. Changes noted on the 1993 map include presence of the Office Building and the Pump House with Water Tank on the Site's northern portion and the presence of the Commercial building at 3000 St. Helena Highway and several smaller structures (residences along Lodi Lane) on the Site's southern portion. The site area is not mapped on the 1997 map. No structures are depicted on site on the 2012 map except "Freemark Abbey Winery" is noted on this map.
City Directories	1965 to 2017	**1965, 1969:** 3022 St. Helena Hwy N. – Knight's Trenching & Sewer Construction **1974:** 3024 St Helena Hwy N. – Edward Bowers **1977:** 3010 St Helena Hwy N. – The Wine Garden 3024 St Helena Hwy N. – Edward Bowers 3022 St Helena Hwy N. – Freemark Abbey Winery, Frank Wood & Sons 1157 Lodi Lane - Mick Loveland 1179 Lodi Lane – Robert Bomar 1199 Lodi Lane – Alfonso B Cobian, Elias Cobian 3000 St Helena Hwy N., 1181 Lodi Lane - XXX **1981:** 3000 St Helena Hwy N. – Findings Unlimited 3022 St Helena Hwy N. – Freemark Abbey Winery, Frank Wood & Sons 1199 Lodi Lane – Michael R Cochran 3010 St Helena Hwy N., 3020 St Helena Hwy N., 1157 Lodi Lane, and 1181 Lodi Lane – XXX **1986:** 3020 St Helena Hwy N. –Freemark Abbey, Abbey Restaurant, Coffee Garden, Hurd Beeswax Candles, Hurds Gift and Gourmet 3022 St Helena Hwy N. – Freemark Abbey Winery, Frank Wood & Sons, Datavine, Knickerbockers, St Helena Viticultural, Vintage Previews 1159 Lodi Lane – A Meyer 1199 Lodi Lane – K Young 3000 St Helena Hwy N., 1157 Lodi Lane, 1181 Lodi Lane – XXX **1992:** 3000 St Helena Hwy N. – Elrod Antiques 3010 St Helena Hwy N. – Brava Terrace 3020 St Helena Hwy N. –Abbey Restaurant, Hurd Beeswax Candles 3022 St Helena Hwy N. – Freemark Abbey Winery, Rutherford Hill Winery 1159 Lodi Lane – Adolf Meyer 1181 Lodi Lane - David Brownscombe

Table 4: Historical Information Reviewed/Agency Records Summary		
Source	**Date**	**Information Obtained**
City Directories	1965 to 2017	**1995:** 3000 St Helena Hwy N. – Elrod Antiques 3010 St Helena Hwy N. – Brava Terrace 3020 St Helena Hwy N. – Hurd Beeswax Candles, Hurd Gifts and Gourmet 3022 St Helena Hwy N. – Freemark Abbey Winery, Abbey Restaurant, Rutherford Hill Winery 1159 Lodi Lane – Adolf Meyer 1179 Lodi Lane – Juli L Mathis 1181 Lodi Lane - Paige Vanderbilt 1157 Lodi Lane, 1165 Lodi Lane, 1199 Lodi Lane – Occupant Unknown **2000:** 3010 St Helena Hwy N. – Brava Terrace, F D Halpert 3020 St Helena Hwy N. – Hurd Beeswax Candles, Hurd Gifts and Gourmet, Napa Valley Beeswax Candle Factory and Gift and Gourmet 3022 St Helena Hwy N. – Freemark Abbey Winery, Hurd Beeswax Candles, Hurd Gifts and Gourmet, Mather and Associates 1157 Lodi Lane – Kathi M Weber 1179 Lodi Lane – Rebecca Huebschle 1189 Lodi Lane – The Eagle and The Rose Inn 1199 Lodi Lane – Steven L Ross 1165 Lodi Lane - Occupant Unknown **2005:** 3000 St Helena Hwy N. – Artisan Wine Tasting, Café 29 3010 St Helena Hwy N. – F D Halpert 3020 St Helena Hwy N. – Hurd Beeswax Candles, Hurd Gifts and Gourmet, Napa Valley Beeswax Candle Factory and Gift and Gourmet 3022 St Helena Hwy N. – Freemark Abbey Winery, Highlands Wine Co. **2005:** 1157 Lodi Lane – Christopher R Kelly 1179 Lodi Lane – Salvador Sanchez 1181 Lodi Lane - Denise R Steelman 1199 Lodi Lane – Matt W Steffen 1159 Lodi Lane, 1165 Lodi Lane – Occupant Unknown **2010:** 3000 St Helena Hwy N. – A Dozen Vintners 3020 St Helena Hwy N. –Silverado Brewing Co. 1157 Lodi Lane – Josh Brouse 1159 Lodi Lane – Alfredo G Ramirez 1181 Lodi Lane - Carlos Ortiz 1189 Lodi Lane – The Eagle and The Rose Inn 1190 York Lane – Norman Alumbugh 1165 Lodi Lane, 1179 Lodi Lane - Occupant Unknown **2014:** 3020 St Helena Hwy N. –The Silverado Brewing Co. 3022 St Helena Hwy N. – Freemark Abbey Winery 1157 Lodi Lane – Matthew Denny 1159 Lodi Lane – Alfredo G Ramirez 1165 Lodi Lane – Andy T Kahn 1179 Lodi Lane – Norma Delatorre 1181 Lodi Lane - Carlos Ortiz 1190 York Lane – Occupant Unknown **2017:** 3000 St Helena Hwy N. – Jackson Family Enterprises 3020 St Helena Hwy N. –The Silverado Brewing Co. 1157 Lodi Lane – Kim J Potvin 1159 Lodi Lane – Alfredo G Ramirez 1165 Lodi Lane – Andy T Kahn

5.1 Aerial Photographs

The Site's northern portion is shown as undeveloped land except the Freemark Abbey Winery building and possibly a smaller building in area of the New Winery building are visible in the 1947 photo; in this photo the southern portion is developed with the commercial building at 3000 St. Helena Highway and a medium-size building ("Builder's Supply" structure) to the south of this commercial building along with a structure on the eastern side (in area of current duplex), a small structure east of the commercial building (western end of the current motel/apartment building), a large structure (area of former residence "the Old Victorian"), two small structures (cabins) to southeast and west of current motel/apartment building, and a barn-like structure.

No significant changes noted on the Site in the 1952 photo except a paved parking lot appears to be present on the southeastern corner of the intersection of St. Helena Highway and Lodi Lane. No significant changes noted on the Site in the 1958 photo except a residential structure is visible at 1165 Lodi Lane and current motel/ apartment building appear to be present. No significant changes noted on the Site in the 1968 photo except small dark-colored rectangular areas (possibly sheds) are visible in the area of the current vineyard south of the Maintenance Shop.

By 1968, the current residential structures are visible at 1157/1159, 1165, 1179, and 1181 Lodi Lane with the other structures previously noted still visible.

The 1970 photo is of poor quality and details can not be discerned. In the 1973 photo, numerous structures are visible on the Site's northern portion (Freemark Abbey Winery building with possibly one AST to north, New Winery building, Pump House and Water Tank, and a small shed at the Site's northwestern corner) and on the Site's southern portion (duplex, three residences along Lodi Lane, motel/apartment building, cabins to the southeast and west of the motel/apartment building, the former residence "the Old Victorian", barn, and "Builder's Supply" structure).

No significant changes noted in the 1982 photo except as follows: the Office building is visible and the Shed appears to be present on the Site's northern portion and the "Builder's Supply" structure has been demolished.

No significant changes noted in the 1993 photo except the two cabins previously noted on the Site's southern portion have been demolished.

By 2006 the Maintenance Shop had been constructed on the Site's northern portion and vineyards are present on the eastern and southeastern areas; no significant changes were noted on the Site's southern portion except the current water storage tank is present to the south of the commercial building at 3000 St. Helena Highway, the former residence "the Old Victorian" and barn have been demolished, and what appears to be piles of lumber are visible in the area of the residence at 1190 York Lane. No significant changes are noted in the 2009 photo. In the 2012 photo, the Site appears generally as it does currently but two small rectangular-shaped features (possibly lumber piles or sheds) are visible on the Site's southern portion (southeast of the commercial building at 3000 St. Helena Highway) and the residence is visible at 1190 York Lane.

By 2016, the Site appears generally as it does currently.

6. REGULATORY AGENCY RESEARCH

As part of this assessment, ERA reviewed regulatory databases and available agency files and records for the Site. Information from these sources is discussed in the following sections.

6.1 Regulatory Database Research

An environmental database report prepared by EDR was reviewed for local, state, and federal listings for properties within the site area. Included in EDR's report are regulatory databases reviewed by EDR for cases pertaining to leaking underground storage tanks (USTs) and ASTs, hazardous waste sites, and abandoned sites within ASTM-specified radii (Table 5).

EDR also reviewed selected databases generated by the United States Environmental Protection Agency (U.S. EPA). Explanations of the regulatory agency databases reviewed and acronyms used by EDR are presented in EDR's report in Appendix E.

Table 5: Regulatory Agency Databases/Lists Reviewed

Search Radius	Agency	Database	Type of Records in Database
1 mile	U.S. EPA	NPL	Sites designated for Superfund cleanup by the U.S. EPA
	DTSC	RESPONSE	State equivalent NPL: Site with confirmed releases where DTSC is involved in remediation, either in a lead or oversight capacity; these confirmed release sites are generally high-priority and high potential risk
	DTSC	ENVIROSTOR	State equivalent CERCLIS: Sites that have known contamination or sites for which there may be a reason to investigate
	U.S. EPA	CORRACTS	RCRA facilities undergoing "corrective actions"
	DHS	BEP	Specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds
0.5 mile	U.S. EPA	CERCLIS	Sites under review by the U.S. EPA
	U.S. EPA	TSD	Facilities that treat, store and/or dispose of hazardous waste
	RWQCB	LUST	Sites with LUSTs
	IWMB	SWLF/SWAT	Sites permitted as solid waste landfills, incinerators or transfer stations
	SWRCB	WMUDS/ SWAT	Tracking and inventory of waste management units
	U.S. EPA	CERCLIS – NFRAP	CERCLIS sites with no further remedial actions planned.
Site and Adjacent Properties	U.S. EPA	RCRA Generator	Sites that generate large or small quantities of hazardous waste
	U.S. EPA and OES	ERNS	Sites with reported accidental releases of oil and hazardous substances
	SWRCB	UST	Sites with registered USTs

Notes:

AST=aboveground storage tank
BEP=Bond Expenditure Plan
CERCLIS=Comprehensive Environmental Response, Compensation and Liability Information System
CORRACTS=Corrective Action Report
DPH=Department of Public Health
DTSC=Department of Toxic Substances Control
ERNS= Emergency Response Notification System

IWMB=Integrated Waste Management Board
LUST=Leaking Underground Storage Tank
NFRAP=No Further Remedial Action Planned
NPL=National Priorities List
OES=Office of Emergency Services
RCRA=Resource Conservation and Recovery Act
RWQCB=Regional Water Quality Control Board
SCL=CORTESE List
SWAT=Solid Waste Assessment Test
SWIS=Solid Waste Information System
SWLF=Solid Waste Landfills
SWRCB=State Water Resources Control Board
U.S. EPA=U.S. Environmental Protection Agency
UST=underground storage tank
WMUDS=Waste Management Unit Database

6.1.1 Site

According to EDR's Radius Map Report, the site address of 3022 St. Helena Highway has been included in the regulatory agency databases reviewed for this assessment.

The Site has been included in the following databases:

- FINDS and CERS databases: listed for the presence of an air monitoring station for ambient air pollution data; monitoring was reported to have started in 1972 and data was last reported in 2006; no additional information was available;
- FINDS database: listed as a waste discharge facility in 2013;
- FINDS and ECHO databases: listed as having an industrial stormwater permit issued in 2017;
- HWTS database: listed in the data repository for hazardous waste manifests and waste identification number information; file created on June 15, 2018, for winery operations; listed as inactive on September 14, 2018;
- ECHO database: listed as an active RCRA hazardous waste generator (file created in 2018) with no violations reported; the Site was listed as a RCRA NonGen/NLR with verification in 2018 that the facility no longer generated hazardous waste (reported as universal waste) with no violations reported;
- HAZNET and HWTS databases: listed for disposal of asbestos-containing waste at a landfill in 2008 (0.8 tons) and in 2015 (1.84 tons);
- HAZNET and HWTS databases: listed for disposal of off-specification, aged, or surplus organics in 2004 (0.08122 tons);
- CIWQS database: listed for industrial stormwater permits: 1) effective date 1992 and termination date in 2001; 2) effective date 2001, termination in 2008; 3) effective date 2007, currently active;
- NPDES and CERS databases: listed for an industrial stormwater permit; listed as active in 2017;
- FIFRA/TSCA FTTS: listing for a 1994 inspection during which no violations were noted;
- WDS and CERS databases: listed as an active facility with continuous or seasonal discharge that is under Waste Discharge Requirements and as a chemical storage facility; compliance inspections conducted in 2015, 2018 with no violations reported; CUPA listed as Napa County Planning, Building, and Environmental Services Department Environmental Health Division (NCEHD); and
- Napa County LUST database: listed as an open LOP case with the NCEHD (see discussion below).

ERA contacted NCEHD for information regarding the listing in the Napa County LUST database. Mr. Doug Calhoun search NCEHD's databases and files and discussed this case with other NCEHD staff and no records were located related to this case. Mr. Calhoun noted that NCEHD opens a case when notified that an UST is discovered at a property. If no impacts or minimal impacts (limited quantity of impacted soil that can be excavated during the tank removal operations) are noted then NCEHD will change the status from an open LOP case to a closed LOP case. Since no file was located for the Site, Mr. Calhoun assumes that no impacts or minimal impacts were encountered at the Site. Mr. Calhoun stated that NCEHD will change the status of the Site's LOP case to "Closed" and will update the database.

The Site's inclusion on the above noted databases does not appear to present a significant environmental concern to the Site.

6.1.2 Off-Site Properties

According to EDR, no regulated facilities were identified within the ASTM search distances during the regulatory agency databases review.

Buckhorn Trailer Park. This property, addressed 3043 St. Helena Highway, is located adjacent to the west of the Site (across St. Helena Highway from Freemark Abbey Winery building) and has been included in the UST database. No additional information was available from EDR or in the SWRCB's Geotracker database regarding this UST. Based on the lack of a reported release, this facility does not appear to present a significant environmental concern to the Site.

Fred A. Bertolini Property. This property, addressed 1181 York Lane, is located 345 feet east of the Site (east of the 1190 York Lane residence) and has been included in the SWEEPS UST and Historical UST databases. The file for this property was created in 1985 and notes one 500-gallon gasoline UST is located on the property with status listed as active. No additional information was available from EDR or in the SWRCB's Geotracker database regarding this UST. Based on the lack of a reported release, this facility does not appear to present a significant environmental concern to the Site.

6.1.3 Orphan Properties

Regulated properties that could not be located because of insufficient address information are referred to by EDR as "orphan" facilities. EDR did not identify orphan properties in the site vicinity.

6.1.4 Vapor Encroachment Condition

Vapor encroachment occurs when vapors from volatile chemicals in soil or groundwater intrude upon another property where they may migrate upwards into the indoor air of overlying buildings. The chemicals responsible for vapor encroachment include volatile organic compounds (VOC), semi-volatile organic compounds (SVOCs), and volatile inorganic compounds such as mercury. Once contaminant vapors enter a structure, they may accumulate and potentially pose health hazards for building occupants.

The ASTM released its Vapor Encroachment Standard (ASTM E 2600-10) in 2010 to provide guidance on evaluating vapor encroachment when performing a Phase I ESA. In accordance with the new ASTM standard, two conditions are evaluated: Vapor Encroachment Condition (VEC) and potential Vapor Encroachment Condition (pVEC). A VEC results from "the presence or likely presence of any chemicals of concern in the indoor air environment of existing or planned structures on a property caused by the release of vapor from contaminated soil or groundwater on the property or within close proximity to the property, at a concentration that presents or may present an unacceptable health risk to occupants." A pVEC is "a condition that exists when screening indicates the possibility of a VEC, but where there is insufficient data to ascertain the presence or likely

presence of compounds of concern (COCs) in the indoor air environment." "Chemicals of Concern" are defined by the ASTM to be "chemicals in the subsurface environment that are known or reasonably expected to be present, that can potentially migrate as a vapor into an existing or planned structure on a property, and that are generally recognized as having the potential for an adverse impact on human health."

ERA has found no evidence of a potential release of vapor encroachment contaminants of concern (as identified in ASTM E 2600-10) into the subsurface due to the current or past on-site operations discussed elsewhere in this Phase I ESA report. Considering there was no evidence of a release, a vapor encroachment condition due to on-site sources is unlikely to exist.

6.2 Agency Research

Files and records available at the agencies listed in Table 6 were reviewed for site information.

Table 6: Agency Files/Records Summary

Source	Date	Information Obtained
Cal-EPA State Water Resources Control Board (SWRCB)	December 2021	Available information maintained on the RWQCB website (http://geotracker.swrcb.ca.gov) was reviewed for records concerning hazardous substance/waste spills, USTs, and LUSTs at the Site. Records for the Site were not identified.
SWRCB Storm Water Multiple Applications & Report Tracking System (SMARTS)	December 2021	ERA searched the SMARTS website. Records for the Site were identified for Freemark Abbey at 3022 St. Helena Highway. The industrial permit is under Jackson Family Wines and is active with status date of September 21, 2017. A Storm Water Pollution Prevention Plan (SWPPP) was prepared by Kennedy/Jenks Consultants in 2015. The SWPPP was originally prepared in 1992. The SWPPP notes that the Site and three additional facilities are covered under Waste Discharge Requirements (WDR). Wastewater is noted to be routed to a wastewater pond system located on the Markham Winery property for treatment of combined winery process and domestic wastewater and disposal of treated wastewater to land. Treated effluent is reportedly used for drip irrigation on vineyards located on site and at the Culinary Institute's property. The SWPPP details the monitoring plan. Various stormwater sampling reports were contained in the SMARTS file. The submitted annual reports include facility maps showing drainage. Posted documents included recertifications for 2018, 2019, 2020, and 2021. The current *Notice of Intent General Permit to Discharge Storm Water Associated with Industrial Activity* is dated August 31, 2021. A letter from the RWQCB dated August 31, 2021, notes receipt of the Site's *No Exposure Certification*.
Cal-EPA Department of Toxic Substances Control (DTSC)	December 2021	Review of DTSC's website (http://www.envirostor.dtsc.ca.gov/public/) for spills, releases, and cleanup actions. Records for the Site were not identified.
Department of Water Resources	December 2021	The Department of Water Resources (DWR) was contact for records for on-site water-supply well. DWR had no records for on-site water-supply wells.

Table 6: Agency Files/Records Summary

Source	Date	Information Obtained
Geologic Energy Management Division	November 2021	ERA searched the Well Finder CalGEM Well Finder website. No oil and gas wells are located on the Site or adjoining properties. A copy of the map is presented in Appendix B.
Napa County Assessor	November 2021	The Napa County APNs for the Site are 022-130-023-000, 022-130-027-000, 022-130-028-000, 022-130-024-000, 022-220-029-000, and 022-220-028-000. Copies of the parcel maps are presented in Appendix B.
Napa County Fire Department (NCFD)	November 2021	ERA contacted the NCFD for files maintained for the Site on chemical spills, hazardous substances storage, hazardous waste generation, USTs, and ASTs and was informed that Napa County maintains these records.
Napa County Planning, Building, and Environmental Services Department (NCPBESD)	November 2021	ERA contacted the NCPBESD for building permits issued for the Site. Provided documents include numerous construction, demolition, and tenant improvements permits for the Site; select permits are summarized below. 3022 St. Helena Highway North • November 6, 1967, Permit notes Gourmet Shop but card file notes Government Shop; other documentation notes gourmet shops located on site and ERA was unable to locate documentation indicating the presence of a Government Shop on the Site. • March 5, 1971, Permit issued for construction of a steel water tank. • May 19, 1971, Permit issued for construction of a pump house. • November 30, 1972, Permit issued for construction of the New Winery. • December 11, 1980, Permit issued for construction of Office Building. 1157/1159 Lodi Lane • May 14, 1962, Application to demolish structures and construct duplex. • February 27, 1964, Permit issued for construction of duplex. 1159 Lodi Lane • July 21, 1986, *Application for Zone Change* notes presence of a building supply yard on site. • February 13, 2011, notes well on parcel 022-220-028 in disrepair. 1199 Lodi Lane • October 8, 1992, House (“Old Victorian”) to be demolished. Lodi Lane Parcel • November 16, 1974, Sketch shows well by motel/apartment building and south of York Lane residence. Copies of the select documents are presented in Appendix B.

Table 6: Agency Files/Records Summary

Source	Date	Information Obtained
Napa County Planning, Building, and Environmental Services Department, Environmental Health Division (NCEHD)	November 2021	ERA contacted the NCEHD for files maintained for the Site on chemical spills, hazardous substances storage, hazardous waste generation, USTs, and ASTs. The following documents were provided by the Environmental Health Division. • December 1, 1977, use permit for water supply and sewage disposal that will serve development operated by Freemark Abbey. • 1978, *Water Well Drillers Report* for a well drilled in 1978, groundwater was encountered at a depth of about 188 feet bgs but stabilized at a depth of approximately 35 feet bgs. The borehole was drilled to a total depth of 300 feet bgs. The map indicated that this well was installed at a distance of approximately 90 feet from St. Helena Highway. • August 12, 1996, *Well Completion Report* for a well drilled on August 12, 1996, groundwater was encountered at a depth of about 70 feet bgs. The borehole was drilled to a total depth of 450 feet bgs on parcel 022-130-023-000. • July 14, 1997, *Application and Permit To Construct a Water Well*, issued for well north of 1157/1159 Lodi Lane. Copies of select documents are presented in Appendix B.
Napa County Agricultural Commissioner Office (NCACO)	November 2021	ERA's representative contacted the NCACO for pesticide and herbicide use permits issued to the Site. According to Ms. Sommer Woolley, Pesticide Use Reports (PUR) for the past 3 years were available and permits had been issued for compounds typical for vineyards. Based on the application of agricultural chemicals per manufacturer's directions and practices common to the industry, as well as the planned continued use of a portion of the Site as a vineyard, no significant environmental concerns were noted regarding the use permits.

No environmental concerns were noted with regards to the records available for review.

6.3 Radon

Radon is a colorless, tasteless radioactive gas with a half-life of 3.8 days. The health risk potential of radon is associated with its rate of accumulation within confined areas, particularly those near or in the ground, such as basements, where vapors can readily transfer to indoor air from the ground through foundation cracks or other pathways. The U.S. EPA-specified action level is 4.0 picocuries per liter of air (pCi/L) with radon levels above 4.0 pCi/L of air considered to be unhealthy.

According to the U.S. EPA, the Site is located in U.S. EPA-designated Zone 3. Average radon concentrations within this zone are predicted to have an average indoor screening level less than 2 pCi/L. The U.S. EPA conducted two radon tests within the Site's zip code and 100% of the test showed radon levels at less than 4 pCi/L. The State of California conducted 16 radon tests within the Site's zip code and four of the test showed radon levels above 4 pCi/L.

Based on ERA's review of available information; it is unlikely that elevated radon levels represent a potential environmental risk for the Site.

7. PREVIOUS ENVIRONMENTAL REPORTS

A previous environmental site assessment report for the Site was provided to ERA. A summary of the findings in this report is presented below. ERA's comments are presented in italics.

Arcadis. 2013. Phase I Environmental Site Assessment Report, APN 022-220-028-000 and 022-220-029-000, St. Helena, California. July 31.

- The Site for this assessment was limited to the parcels located south of Lodi Lane.
- The Site was developed with a duplex, four single-family residences, the motel/apartment building (occupied at that time by Eagle and Rose Inn), two sheds, a shipping container, and a wine tasting room.
- Arcadis staff did not have access to the building interiors and did not conduct interviews.
- Arcadis reviewed permits for two water-supply wells reportedly installed in 1971 and 1997 but noted that the wells were not observed by staff during the site visit.
- No RECs in connection with the Site were identified by Arcadis.
- Arcadis recommended assessment of on-site wells and septic systems, and surveys for ACMs and LBP prior to building renovations or demolition.

ERA staff observed two water-supply wells on the Alumbaugh Property, one east of the duplex at 1157/1159 Lodi Lane and one south of the residence at 1190 York Lane.

8. SITE RECONNAISSANCE

On November 23, 2021, Ms. Lita Freeman of ERA, performed a reconnaissance-level assessment of the Site to observe general site conditions and indications of the possible release(s) of chemicals to the subsurface. A walkover site reconnaissance was conducted to identify visible evidence of RECs. At the time of the site reconnaissance (10:30 am to 1:00 pm), the climate at the Site was sunny and dry with temperatures in the 60^{o}s degrees Fahrenheit) and dry surfaces. Photographs taken during the site reconnaissance are included in Appendix A.

Ms. Freeman was accompanied during the site reconnaissance by Mr. Margarite Jimen, maintenance staff for JFI. Mr. Jimen has been associated with the Site for more than 40 years.

8.1 Methodology and Limiting Conditions

ERA' representative was granted access to the Site, with the exception of the interiors of the following buildings: commercial building at 3010 N. St. Helena Highway, commercial building at 3000 N. St. Helena Highway, and residential buildings at 1157/1159, 1165, 1179, and 1181 Lodi Lane, and residences at 1190 York Lane. Limiting conditions included size of the Site and the presence of thick vegetation across some areas. The methodology for the site visit included walking the Site and observing current site conditions.

8.2 Site Description

At the time of ERA' site visit, the Site's northern portion was developed with commercial buildings and the Site's southern portion was developed with a number of residential buildings and one commercial building. An emergency generator was present on the Site's northern portion and a swimming pool was present east of the southernmost residence (1190 York Lane). Cultivated land (vineyards) was present on the Site's northern portion and open space was present on the Site's southern portion. In addition, four water-supply wells (two on the Site's northern portion and two on the Site's southern portion) and several water storage tanks (one 300,000-gallon tank and several 10,000-gallon tanks) were observed on site. The locations of the structures and items are shown on Figures 2, 3, and 4.

Water to the Site is provided by on-site water-supply wells and wastewater is routed to multiple on-site septic systems. Four water-supply wells were observed by ERA staff during the site visit; however, ERA's review of documents from regulatory agencies indicated that at least two additional water-supply wells may have been located on the Site, but no evidence of additional wells was noted during ERA's site reconnaissance.

An emergency generator was observed to the east of the New Winery building. The emergency generator featured a 784-gallon double-walled steel belly tank for diesel storage. No evidence of staining was observed on or around the emergency generator.

No evidence of former on-site dumps was noted during this assessment.

Site observations are documented in Table 7.

Table 7. Site Observations

Item	Observations/Comments
Evidence of Past Site Use(s)	None revealed by our reconnaissance
Evidence of Past Use(s) of Adjoining Properties	Past uses appeared to be agricultural and scattered residences.
Storm Water	Storm water infiltrates the ground or flows across the ground/ pavement surface to lower elevations and eventually to the Napa River.
Stressed Vegetation	None revealed by our reconnaissance.
Stained Soil or Pavement	None revealed by our reconnaissance except minor staining on pavement from vehicles (*de minimis* condition).
Solid Waste Disposal/Fill Placement	Solid waste bins/cans/dumpsters observed behind the New Winery building, within trash enclosure behind motel/apartment building, and near residences. A grease bin was observed north of the Freemark Abbey Winery Building.
Pits, Ponds, Lagoons	None revealed by our reconnaissance
Pools of Liquid/Standing Water	None revealed by our reconnaissance
Strong, Pungent, or Noxious Odors	None revealed by our reconnaissance
Existing/Former USTs, Vent/Fill Pipes	None revealed by our reconnaissance
Existing/Former ASTs	An emergency generator with a 784-gallon belly tank for diesel storage was observed east of the New Winery building and a diesel AST (to operate water pumps) was observed south of the Pump House. No evidence of staining was observed around these features.
Drums/Containers with Hazardous Liquids/Solids, Hazardous Waste, Petroleum Products	No chemicals other than diesel in the AST and building maintenance supplies (paints, thinners, gasoline, etc.) in the Maintenance Shop were observed on site. No evidence of staining was observed around these features. A swimming pool was associated with the southernmost residence (1190 York Lane). No evidence of pool chemicals was noted in the area around the swimming pool.

Table 7. Site Observations	
Item	**Observations/Comments**
Unidentified Substance Containers	None revealed by our reconnaissance
Sumps/Trenches/Floor Drains	Floor drains were observed in kitchens, trench drains were observed in barrel storage rooms, and storm drains were observed in parking lots. A possible sump was observed near the southeastern corner of the intersection of St. Helena Highway and Lodi Lane. A grease interceptor was observed off the northeastern corner of the Freemark Abbey Winery Building.
Stained Floors	None revealed by our reconnaissance
Petroleum Pipelines	None revealed by our reconnaissance.
Hydraulic Fluid-Containing Equipment	The Freemark Abbey Winery building featured an elevator. The elevator is serviced on a regular basis by Otis Elevator Company.
Equipment Containing Polychlorinated Biphenyls (PCBs)	Two pad-mounted and two pole-mounted transformers were observed on site. A label indicating use of “Envirotemp FR3” fluid was noted on one pad-mounted transformer and “No PCBs” labels were observed on the pad-mounted transformers on the pole at the southeastern corner of the vineyard north of Lodi Lane. “No PCBs” labels were not observed on the remaining transformers. No evidence of leaks or stains were identified around the transformers. The transformers are owned and operated by PG&E. PG&E would be responsible for cleanup in the event of a release.
Wastewater/Treatment	The on-site structures are served by on-site septic systems which accept domestic and industrial (from winery operations) wastewater.
Heating/Cooling Method	The on-site structures are reportedly climate controlled by roof-mounted HVAC units and electric and natural gas heaters.
Water-Supply/Oil and Gas Wells	Four water-supply wells were observed by ERA staff during the site visit; however, ERA’s review of documents from regulatory agencies indicated that at least two additional water-supply wells may have been located on the Site, but no evidence of additional wells was noted during ERA’s site reconnaissance. No oil or gas wells were observed in the site vicinity.
Potable Water Supply	Water is supplied to the Site by an existing water-supply wells and the City of St. Helena.
Septic Systems/Sanitary District	The on-site structures are served by on-site septic systems.
Electricity	PG&E
Natural Gas	PG&E
Other	Not Applicable

No environmental concerns were noted during the site reconnaissance.

9. INTERVIEWS

The individuals noted in Table 8 were contacted in person, by phone, or by written communication to obtain information relevant to the environmental status and condition of the Site. Specific information provided by the individuals contacted is presented in the relevant sections of this report.

Table 8. Interviews

Relationship to Property	Name/Affiliation
Key Site Manager/Owner Representative	Mr. Margarite Jimen, Maintenance Staff, Freemark Abbey Winery
User Representative	Mr. Geoff Scott, JFI
Tenants	The various tenants who occupy the on-site residences were not available for interviews.
Local Government Agency	As noted in Section 6.2

Information obtained from others noted in Table 8 is presented throughout this report.

10. FINDINGS

This section discusses information was obtained by ERA from our review of regulatory agency files and databases, our site observations, and interviews during the Phase I ESA.

10.1 On-Site Findings

- Based on review of available historical resources, the Site was developed by 1900/early 1900s with the Freemark Abbey Winery building on the Site's northern portion and a residential structure ("the Old Victorian") on the Site's southern portion. By the late 1930s to mid-1940s, a smaller building had been constructed east of the Freemark Abbey Winery building and numerous structures had been constructed on the Site's southern portion, including the commercial building at 3000 St. Helena Highway North, a commercial building ("Builder's Supply" structure), a residential structure in area now occupied by the duplex, the western portion of the motel/apartment building, two small structures ("Cabins"), and a barn-like structure ("Barn"). The motel/apartment building was expanded and residential structures were constructed immediately south of Lodi Lane in the 1950s and 1960s; the residences at 1179 Lodi Lane and 1190 York Lane were constructed in 1982 and 2003/2004, respectively. The Pump House and Water Tank, the commercial building at 3010 St. Helena Highway North, and the New Winery building were constructed on the Site's northern portion in the 1970s. The Cottage was constructed on the Site's northern portion sometime before 1980, the Office Building was constructed in 1980, and the "Builder's Supply" structure was demolished by 1982. By the mid-2000s, the Site appeared generally as it does today with construction of the Maintenance Shop (late 1990s/early 2000s) and planting of vineyards on the Site's northern portion and demolition of the Old Victorian, Barn, and Cabins by 2006. The Site has remained essentially unchanged since the late 1990s.
- Structures observed on site during ERA's site visit were: Freemark Abbey Winery building, New Winery Building, two commercial buildings (3000 and 3010 St. Helena Highway North), the Office Building, the Maintenance Shop, the Cottage, the Pump House and Water Tank, the Shed, the duplex, Motel/Apartment Building, and four residences. Several water storage ASTs), a diesel AST at the Pump House/Water Tank,

and an emergency generator with a double-walled steel belly tank for diesel storage were also observed on site. No evidence of staining was observed around these structures. Cultivated land (vineyards) was present on the Site's northern portion and open space was present on the Site's southern portion.

- Four water-supply wells were observed on site with two additional wells possibly located on the Site's southern portion (based on ERA's review of documents from regulatory agencies).
- The on-site structures are served by septic systems. No significant environmental concerns were noted with the systems based on discharge of only winery process and domestic wastewater to the systems.
- According to EDR and ERA's review of online databases, the Site has been included in various regulatory agency databases reviewed for this assessment, as follows: FINDS and CERS for air monitoring station for ambient air pollution data; FINDS for a waste discharge facility; FINDS, ECHO, CIWQS, NPDES, CERS, and WDS for an industrial stormwater permit; HWTS for hazardous waste manifests; ECHO, RCRA, and RCRA RCRA NonGen/NLR as a former hazardous waste generator; HAZNET and HWTS (disposal of asbestos-containing waste and organics); FIFRA/TSCA FTTS for pesticide use; and Napa County LUST as an open Local Oversight Program case with the NCEHD.

  Discussions with NCEHD staff indicated that no records related to this case were available. NCEHD reportedly opens a case when notified that an UST is discovered at a property. According to NCEHD staff, if no impacts or minimal impacts are noted during the UST removal then NCEHD will change the status from an open LOP case to a closed LOP case. Since no file was located for the Site, NCEHD staff assumes that no impacts or minimal impacts were encountered at the Site and the NCEHD will change the status of the Site's LOP case to "Closed" and will update the database.

  The Site's inclusion on the above noted databases does not appear to present a significant environmental concern to the Site.

10.2 Off-Site Findings

- The surrounding areas were predominantly developed with residences or used for agricultural purposes (predominantly vineyards) in the past with scattered structures and vineyards present currently.
- According to EDR, no facilities were identified in regulatory agency databases within the ASTM search distances that would present a significant environmental concern to the Site.
- Regulated properties that could not be located because of insufficient address information are referred to by EDR as "orphan" facilities. No orphan properties were identified by EDR in the site vicinity.

11. OPINION

This section discusses known or suspect environmental concerns, historical environmental concerns, and *de minimis* conditions identified during the ESA.

11.1 Known or Suspect Recognized Environmental Conditions

A *REC* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment.

The following was identified during the course of this assessment:

- ERA did not identify *RECs* during the course of this assessment.

11.2 Known or Suspect Controlled Recognized Environmental Conditions

A *CREC* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

The following was identified during the course of this assessment:

- ERA did not identify *CRECs* during the course of this assessment.

11.3 Known or Suspect Historical Recognized Environmental Conditions

A *HREC* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

The following was identified during the course of this assessment:

- ERA did not identify *HRECs* during the course of this assessment.

11.4 De Minimis Conditions

A *de minimis* condition is a condition that generally does not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The following was identified during the course of this assessment:

- ERA did not identify a *de minimis* condition during the course of this assessment except for minor oil staining on pavement in the parking lots.

12. CONCLUSIONS

ERA has performed a Phase I ESA of the Site in conformance with the scope and limitations of ASTM Practice E 1527-13.

Based on the available information, ERA did not identify RECs, CRECs, or HRECs in connection with the Site.

13. RECOMMENDATIONS

Based on the findings of this Phase I ESA, no further assessment appears warranted at the Site.

Construction details of the diesel AST at the Pump House/Water Tank were not available. As a best management practice, consideration should be given to providing secondary containments for the diesel AST if the diesel AST is not of double-walled construction to help prevent impacts to surrounding soil in the event of a release from the AST.

If future plans do not include the use of one or more of the water-supply well(s), the well/wells should be destroyed in accordance with local and state regulations.

Based on the ages of the on-site buildings, surveys for ACMs and LBP will be necessary if renovations or demolition of the buildings are planned. If the LBP survey identifies that LBP were used on exterior walls, collecting and analyzing soil samples from around the building(s) should be considered to evaluate if lead has impacted soil.

14. DEVIATIONS/DATA GAPS

ERA has performed this Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13 and 40 CFR Part 312. Any additions to or deletions from this practice are described in Section 2.4.

The following limiting factors were documented during this assessment:

- Lack of a 50-year chain-of-title report;
- Intervals between aerial photographs/topographic maps were more than 5 years.
- Lack of access to the interiors of two commercial buildings (3000 and 3010 St. Helena Highway North) and residential buildings (1157/1159, 1165, 1179, and 1181 Lodi Lane, and 1190 York Lane) were not accessible during ERA's site visit;
- Inability to observe surface soil in some areas because of thick vegetation; and
- Lack of analytical data on soil quality at the Site.

These limiting factors represent data gaps but do not represent significant data gaps and are unlikely to impact ERA' ability to identify RECs. Based on information obtained by ERA during our review of historical sources and observation of site conditions during our visit, these limiting factors would not appear to be significant and we do not anticipate that the information that could be obtained from these sources would change the conclusions of this report.

It is unlikely that environmentally persistent pesticides such as DDD were used on site in the past as these types of pesticides were banned in the 1970s and cultivation of the Site began in the late 1980s to early 1990s. The use of agricultural chemicals would not appear to be a significant environmental concern and ERA does not anticipate that the information that could be obtained from soil quality data would change the conclusions of this report based on the anticipated continued agricultural use of the Site.

No significant data gaps were identified during this assessment.

15. ADDITIONAL SERVICES

No additional services were provided as part of this assessment.

16. REFERENCES

America Society for Testing and Materials International (ASTM). 2013. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-13*. November 6.

_____. 2010. *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*. June.

RSA+. 2020. *Water System Feasibility Study for The Inn at the Abbey, 3022 St. Helena Highway, St. Helena, CA 94574*. February.

Environmental Data Resources, Inc. (EDR). 2021. *The EDR Radius Map Report*. Inquiry Number 6753600.2s. November 17.

_____. 2021. EDR - *Certified Sanborn Map Report*. 6753600.3. November 17.

_____. 2021. EDR – *Historical Topo Map Report*. 6753600.4. November 23.

_____. 2021. EDR – *City Directory Image Report*. 6753600.5. November 23.

_____. 2021. EDR – *The EDR-Aerial Photo Decade Package*. 6753600.8. November 17.

Arcadis. 2013. *Phase I Environmental Site Assessment Report, APN 022-220-028-000 and 022-220-029-000, St. Helena, California*. July 31.

United States Department of Agriculture, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov

United States Fish and Wildlife Service, https://www.fws.gov/wetlands/Data/Mapper

Versar, Inc. 2011a. *Soil and Groundwater Investigation Report, California Department of Forestry, St. Helena Forest Fire Station, 3535 Highway 29, St. Helena, California*. September 23.

_____. 2011b. *September 2011 Groundwater Monitoring Report for an Underground Storage Tank Release at the California Department of Forestry, St. Helena Forest Fire Station, 3535 Highway 29, Calistoga (SIC), California*. October 11.

SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The environmental assessment described herein was conducted by the undersigned employee of ERA. ERA's assessment was conducted in accordance with the American Society for Testing Materials International (ASTM) E 1527-13 guidelines dated November 6, 2013, and the Code of Federal Regulations (CFR) 40 CFR Part 312 "Standards and Practices for All Appropriate Inquiries: Final Rule" which became effective on November 1, 2006. This assessment consisted solely of the activities described in the Introduction of this report, and the contract signed by ERA and the client prior to initiation of the assessment.

The undersigned declares that, to the best of her professional knowledge and belief, she meets the definition of environmental professional as defined in §312.10 of 40 Code of Federal Regulations (CFR) 312, and she has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. She has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. *

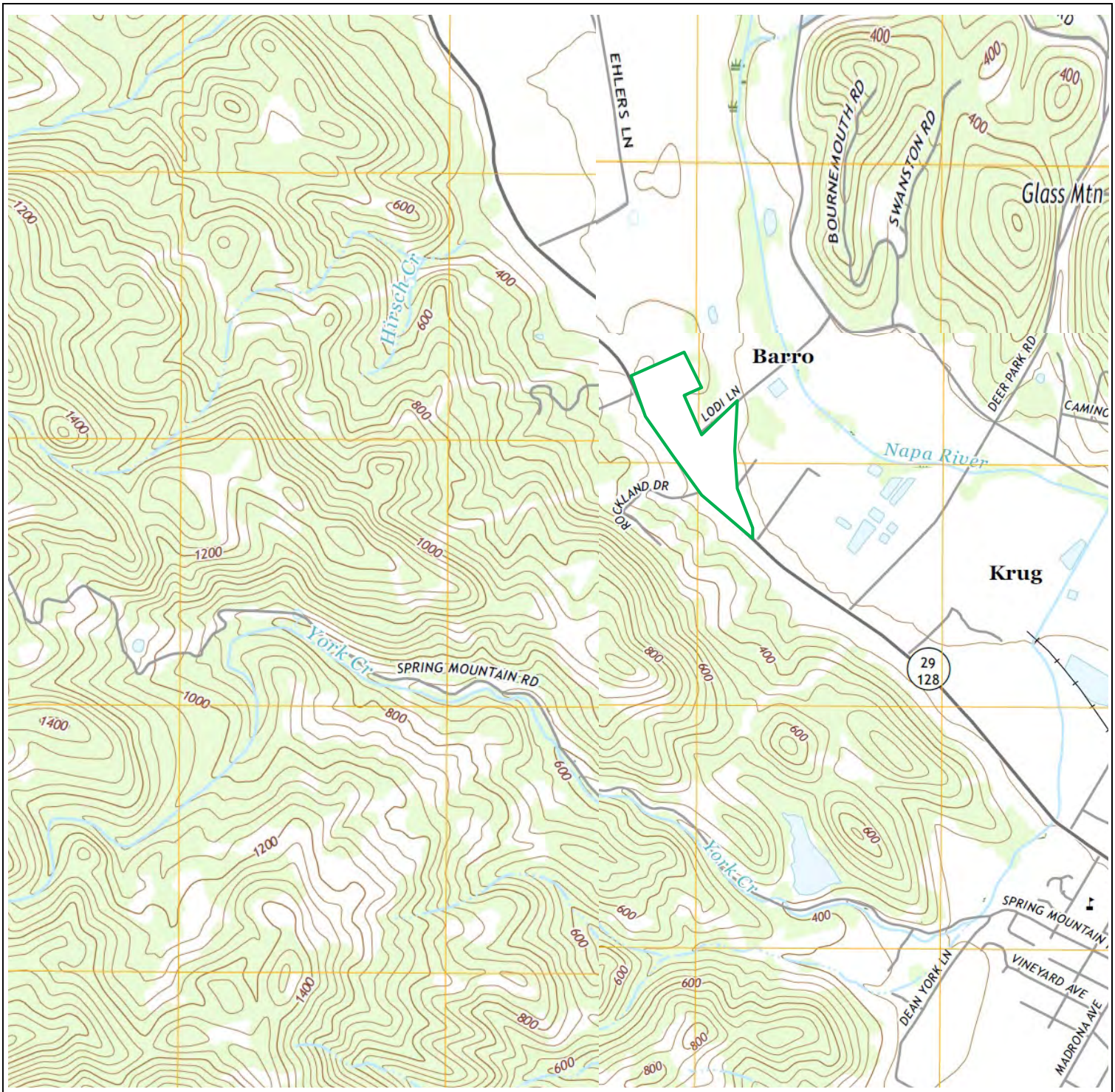
Report Prepared By:

December 23, 2021

Lita D. Freeman, P.G. Date
Principal Geologist
California Professional Geologist No. 7368

* A professional geologist's or registered environmental assessor's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

FIGURES



Legend

— Site (boundaries approximate)

North

ERA soil-water-vapor	**Site Location Map**	PN: 01-2021-900-004
		Date: December 23, 2021
	PHASE I ENVIRONMENTAL SITE ASSESSMENT	**Figure 1**
	Freemark Abbey Winery/Alumbaugh Property, St. Helena, California	

Legend

Site Boundaries (approximate)

North

ERA soil-water-vapor	**Site Plan**	PN: 01-2021-900-004
	PHASE I ENVIRONMENTAL SITE ASSESSMENT	Date: December 23, 2021
		EP: Lita Freeman
	Freemark Abbey Winery/Alumbaugh Property, St. Helena, California	**Figure 2**

Legend

- Site Boundaries (approximate)
- Structure with Street Number/Use
- Water-Supply Well
- Water Tank
- Diesel Storage Tank
- EG Emergency Generator
- T Transformer
- D Dumpster

North

0 150 300

Scale (approximate, feet) / Based on Google Earth

ERA soil-water-vapor	**Site Plan – Freemark Abbey Winery**	PN: 01-2021-900-004
	PHASE I ENVIRONMENTAL SITE ASSESSMENT	Date: December 23, 2021
		EP: Lita Freeman
	Freemark Abbey Winery/Alumbaugh Property, St. Helena, California	**Figure 3**

Legend Site Boundaries (approximate) Structure/Street Number

Former Structure G-Garage C-Cabin BS-Building Supply/Shed

Water-Supply Well Possible Water-Supply Well Water Tank

Site Plan – Alumbaugh Property	PN: 01-2021-900-004
PHASE I ENVIRONMENTAL SITE ASSESSMENT	Date: December 23, 2021
Freemark Abbey Winery/Alumbaugh Property St. Helena, California	**Figure 4**

Appendix A

Site Photographs

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 1 **Description:** Photo depicts view to the east of the west elevation of the Freemark Abbey Winery Building.	

Photograph: 2 **Description:** Photo depicts the Freemark Abbey Winery Building. View to the north-northeast.	

Photographs taken by L. Freeman on November 23, 2021

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 3 **Description:** Photo depicts the Freemark Abbey Winery (on right) and the Cottage (on left) with grease interceptor in foreground. View to the south.	
Photograph: 4 **Description:** Photo depicts the Freemark Abbey Winery Building on left, the Shed and water storage ASTs on right. View to the west.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 5 **Description:** Photo depicts water treatment chemicals inside the Shed north of the Freemark Abbey Winery Building.	
Photograph: 6 **Description:** Photo depicts the west elevation of the New Winery Building. View to the east.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 7 **Description:** Photo depicts the commercial building (3010 St. Helena Highway North) on left with Office Building at end of driveway on right. View to the north.	
Photograph: 8 **Description:** Photo depicts the Office Building. View to north.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 9 **Description:** Photo depicts the New Winery Building on right, Office Building in background, and empty ASTs in front of Maintenance Shop on left. View to the west.	
Photograph: 10 **Description:** Photo depicts Pump House by Water Tank. Note diesel AST beside Pump House. View to the north.	

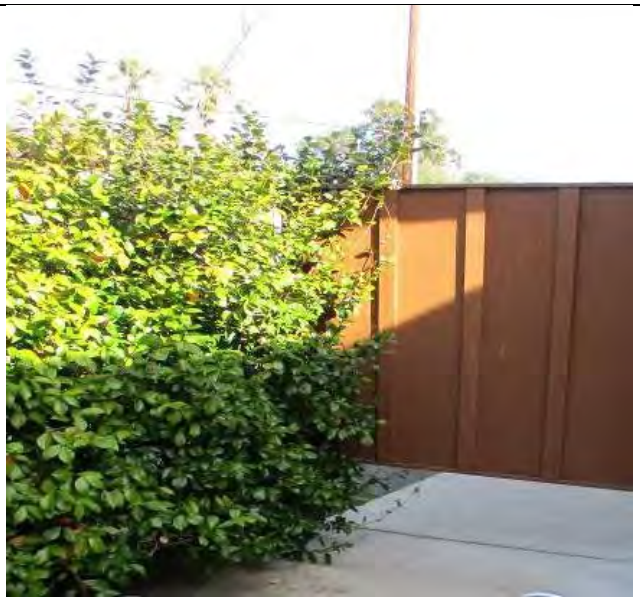
Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 11 **Description:** Photo depicts interior of the Pump House.	
Photograph: 12 **Description:** Photo depicts the water storage tank. View to the east.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 13 **Description:** Photo depicts the emergency generator by Water Tank. View to the east.	
Photograph: 14 **Description:** Photo depicts transformers to the north of the Freemark Abbey Winery Building. View to north.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 15 **Description:** Photo depicts water-supply well near the northwestern corner of the Freemark Abbey Winery Building.	
Photograph: 16 **Description:** Photo depicts the water-supply well in the vineyard south of the Maintenance Shop. View to the south-southeast.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 17 **Description:** Photo depicts the on-site residence at 1157 Lodi Lane. View to the south.	
Photograph: 18 **Description:** Photo depicts on-site residence 1165 Lodi Lane. View to the southwest.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 19 **Description:** Photo depicts the on-site residence at 1179 Lodi Lane. View to south.	

Photograph: 20 **Description:** Photo depicts the Motel/Apartment Building. View to the southeast.	

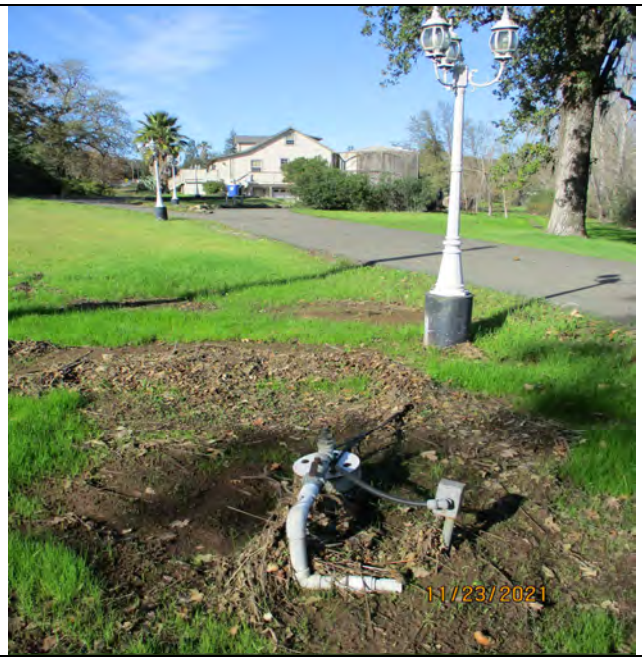
Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 21 **Description:** Photo depicts the commercial building at 3000 St. Helena Highway North. View to the south.	

Photograph: 22 **Description:** Photo depicts on-site residence at 1190 York Lane. View to the north.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 23 **Description:** Photo depicts possible water-supply well east of the duplex.	

Photograph: 24 **Description:** Photo depicts the water-supply well south of the residence at 1190 York Lane. View to the north.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 25 **Description:** Photo depicts possible water-supply well east of the Motel/Apartment Building.	

Photograph: 26 **Description:** Photo depicts interior of the Freemark Abbey Winery Building.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 27 **Description:** Photo depicts kitchen in the Freemark Abbey Winery Building.	

Photograph: 28 **Description:** Photo depicts upper room in the New Winery Building.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 29 **Description:** Photo depicts warehouse in the New Winery Building.	

Photograph: 30 **Description:** Photo depicts flammables cabinet in the Maintenance Shop.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 31 **Description:** Photo depicts chemicals inside the flammables cabinet in the Maintenance Shop.	

Photograph: 32 **Description:** Photo depicts employee break room in the Office Building.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 33 **Description:** Photo depicts north adjoining property. View to northeast.	

Photograph: 34 **Description:** Photo depicts residential buildings on the east adjoining properties.	

Photographic Log
Freemark Abbey Winery/Vineyard and Alumbaugh Property
St. Helena, California 94574
ERA Project No. 01-2021-900-004

Photograph: 35 **Description:** Photo depicts south adjoining property. View to southeast.	

Photograph: 36 **Description:** Photo depicts view to the west of west adjoining properties.	

Appendix B

Regulatory Agency Documentation

National Flood Hazard Layer FIRMette

FEMA

122°30'4"W 38°31'42"N

122°29'27"W 38°31'14"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

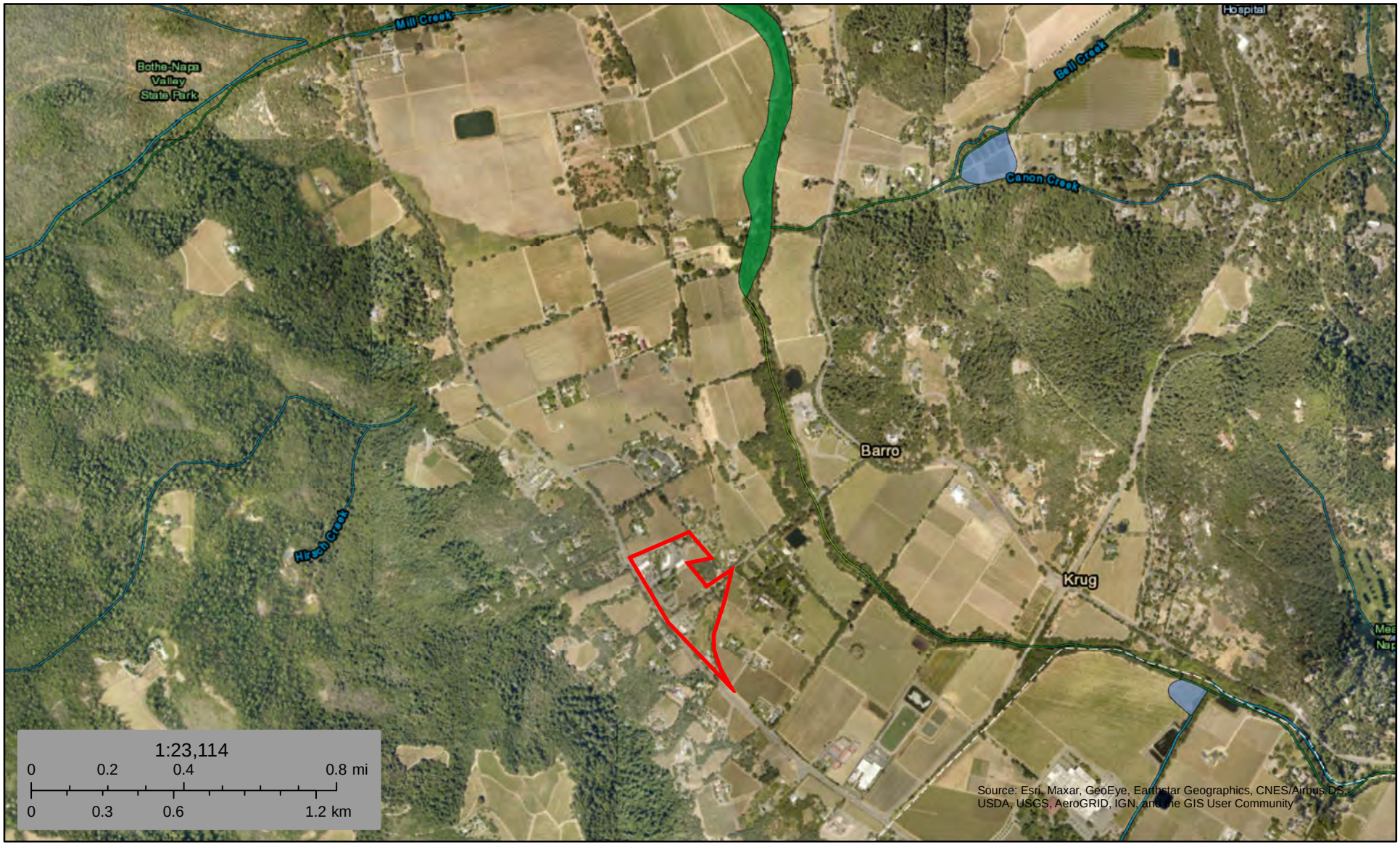
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/20/2021 at 6:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Freemark Abbey Winery/Alumbaugh Prope



December 20, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Napa County, California

St. Helena Hwy, St Helena, CA

December 20, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

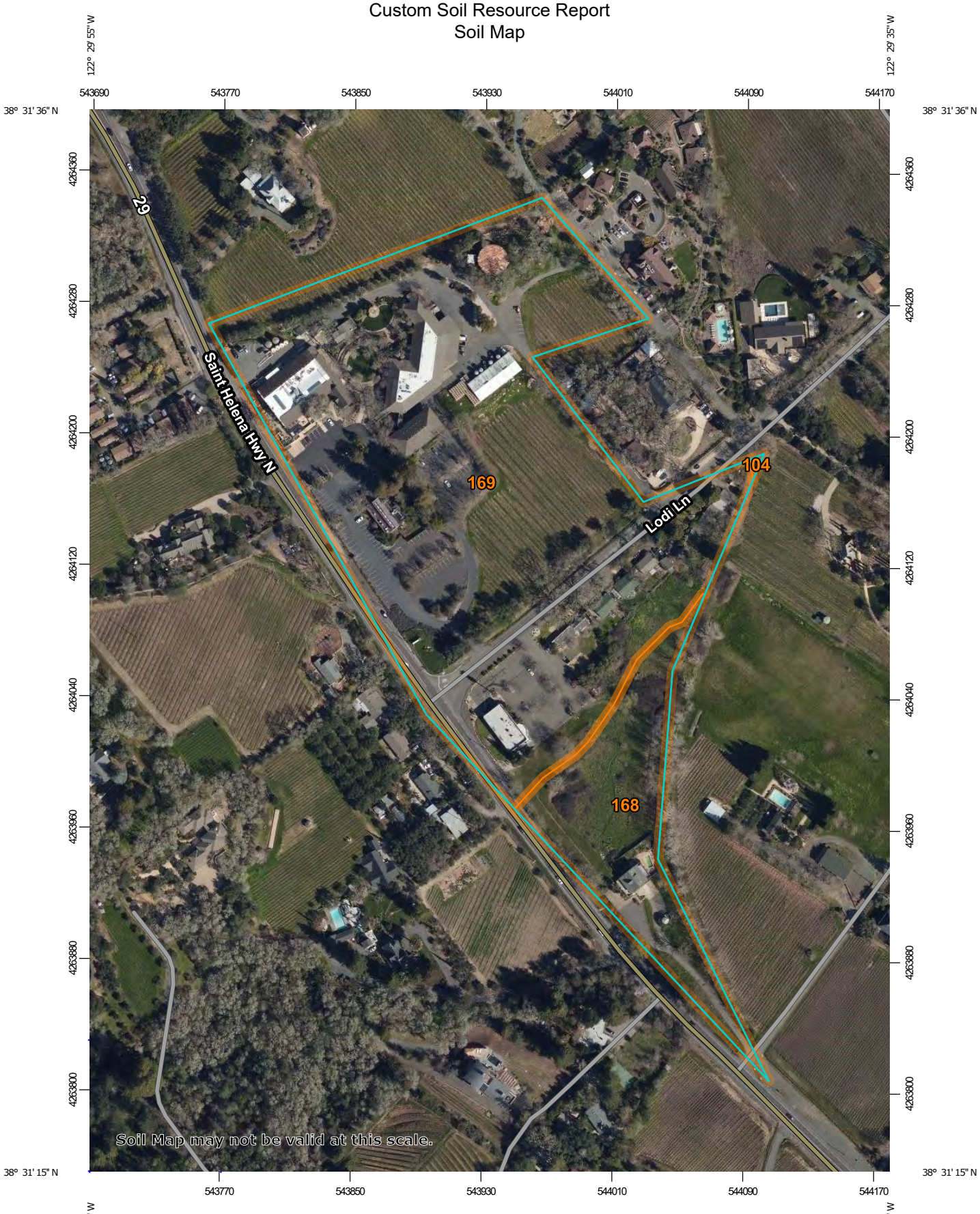
Contents

Preface..... 2
Soil Map..... 5
Soil Map.....6
Legend.....7
Map Unit Legend..... 8
Map Unit Descriptions..... 8
Napa County, California..... 10
104—Bale clay loam, 0 to 2 percent slopes..... 10
168—Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14..... 11
169—Perkins gravelly loam, 5 to 9 percent slopes..... 12
References.....14

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,150 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 14, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2019—Apr 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
104	Bale clay loam, 0 to 2 percent slopes	0.0	0.1%
168	Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14	2.8	15.6%
169	Perkins gravelly loam, 5 to 9 percent slopes	15.2	84.3%
Totals for Area of Interest		**18.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Napa County, California

104—Bale clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hdk4
Elevation: 20 to 400 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 220 to 270 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bale and similar soils: 85 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bale

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from rhyolite and/or alluvium derived from igneous rock

Typical profile

H1 - 0 to 24 inches: clay loam
H2 - 24 to 60 inches: stratified gravelly sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: R014XG907CA - Loamy Bottom
Hydric soil rating: No

Minor Components

Clear lake

Percent of map unit: 3 percent

Landform: Depressions
Hydric soil rating: Yes

168—Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2xcbc
Elevation: 130 to 1,460 feet
Mean annual precipitation: 30 to 41 inches
Mean annual air temperature: 58 to 61 degrees F
Frost-free period: 296 to 347 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Perkins and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Perkins

Setting

Landform: Fan remnants, stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from volcanic and sedimentary rock

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bt1 - 7 to 19 inches: gravelly loam
Bt2 - 19 to 29 inches: gravelly loam
Bt3 - 29 to 44 inches: gravelly clay loam
Bt4 - 44 to 57 inches: gravelly clay loam
Bt5 - 57 to 60 inches: gravelly loam

Properties and qualities

Slope: 1 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R014XG918CA - Loamy Fan
Hydric soil rating: No

Minor Components

Haire
Percent of map unit: 5 percent

Bale
Percent of map unit: 5 percent

Coombs
Percent of map unit: 5 percent

169—Perkins gravelly loam, 5 to 9 percent slopes

Map Unit Setting
National map unit symbol: hdm7
Elevation: 60 to 1,700 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Perkins and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Perkins

Setting
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile
H1 - 0 to 29 inches: gravelly loam
H2 - 29 to 60 inches: gravelly clay loam

Properties and qualities
Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R015XY006CA - Loamy Terrace >20"ppt
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

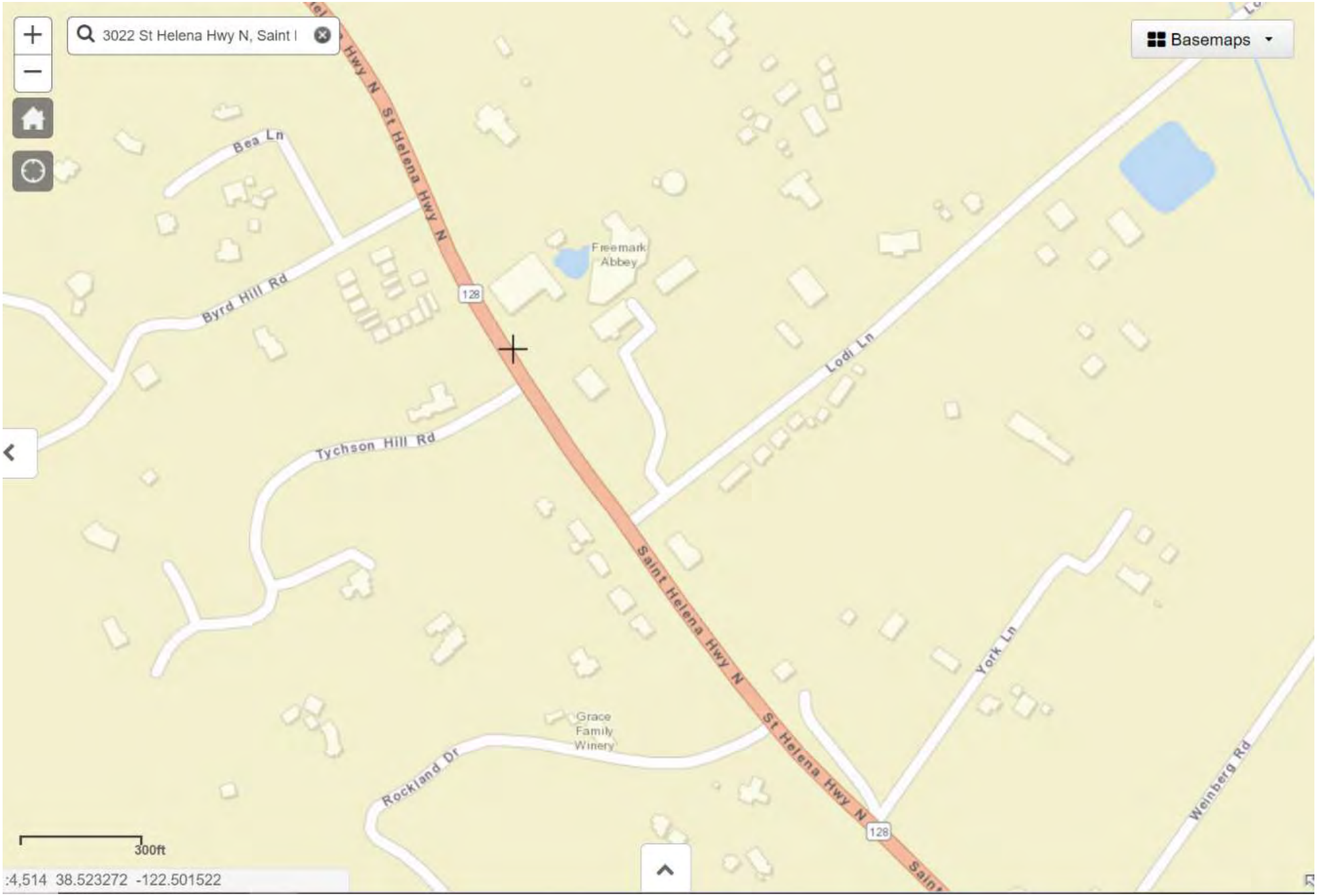
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Site Vicinity Map from Well Finder CalGEM Well Finder website



Provided by:
PARCELQUEST

COUNTY ASSESSOR'S PARCEL MAP

PTN. CARNE HUMANA RANCHO

Tax Area Code
85001

22–13

1.	N07°15'40"E	28.28'
2.	R=109.85'	L=25.01'
3.	R=75.46'	L=27.90'
4.	R=75.46'	L=43.45'
5.	N49°58'26"E	19.70'

10

10

10

ROUTE 29

HWY.

STATE

N60°45'E 544.50' N60°45'E 656.04'

N35°15'W 124.08'

370.46'

N17°13'W

N39°45'W 578.16'

N68°15'E 68.30'

R=340.26' L=241.40'

S P R R.

14
7.79 Ac.

11
6.16 Ac.

N08°32'W

727.16'

385.93'

N49°58'26"E

S50°15'W 383.87'

S09°19'15"E

593.00'

44R/S16

22
2.81 Ac.±

40' R/W

390.00'±

388.63'

S09°21'49"E

540.89'

303.29'

S05°21'49"E 155.30'

LLA 1657

26
5.57 Ac.±

S39°45'E 180.73'

548.01'

S52°15'20"W

N39°45'W 169.73'

09

N65°00'E 187.00'

S40°00'E 20.00'

N60°30'E 335.00'

S51°24'40"W 183.69'

5P/MB-A

PTN. 5P/MB-C

5P/MB-B

20
1.34 Ac.

23 LLA 1129
3.11 Ac.

N37°44'20"W 158.89'

200.64'

111.32'

70.00'

150.00'

216.66'

PTN. 5P/MB-C

N52°15'40"E 188.26'

38.26

PTN. 5P/MB-C 150.00'

5P 151.66'

6P/M66-1

151.66'

S37°44'20"E 318.92'

21
150.00'

N52°15'40"E

N37°44'20"W

LLA 1129

24
5.32 Ac.±

S39°45'E

S50°15'W 200.00'

3
1.11 Ac.±

243.54'

N40°01'34"W 446.00'

20'

42R/S45

25
1.04 Ac.±

N40°01'34"W 243.00'

N39°15'W

S50°45'W

N50°30'E 296.67'

234.00'

549.78'

S50°15'W

N34°04'W

LODI

22

N78°07'E 184.47'

N58°32'E 81.90'

N36°45'W

515.00'

N73°12'E 225.50'

N83°24'E 62.77'

8
4.86 Ac.

Napa

254.49'

S67°53'W

S64°37'W 135.45'

S19°30'E

S14°30'W 184.80'

SR/S121 LINE A

S39°00'E 186.12'

S39°00'E 54.50'

S31°00'E 165.00'

S05°30'E 114.10'

S05°30'E 17.90'

S05°00'E 165.00'

441.80'

N54°15'E

LLA 1891

10
10.67 Ac.±
SFAP

R=362'

SILVERADO TRAIL

N47°30'W

501.60'

R=20'

660.00'

N48°00'E

LANE

396.33'

S50°30'W

475.00'

N35°45'W

9
4.04 Ac.

River

S45°00'E

295.68'

BK. 21
35

1" = 200'

130-06 RMVD SBE LSE	9-21-10
130-25 & 26 LLA	10-5-10
130-25 RS	8-5-13
130-22 COC	9-15-14
130-22 RS	10-14-14
130-10 LLA	6-6-17
REVISION	DATE

1955-62

NOTE: This Map Was Prepared For Assessment Purposes Only , No Liability Is Assumed For The Accuracy Of The Data Delineated Hereon.

R.M. BK. D PAT., PG. 127

22–13

Provided by:
PARCELQUEST

COUNTY ASSESSOR'S PARCEL MAP

22–22

Tax Area Code
85001

1" = 200'

BK. 21
35

LODI LANE
STATE HWY.
ROUTE 29
YORK LANE
WEINBERGER ROAD
RR
NAPA RIVER
(SPRR ABANDONED)
ABANDONED
SAN. R/W

13 20 21 23

LLA 945 (28) 3.45 Ac.±
LLA 945 (29) 1.34 Ac.
(25) 1.45 Ac.±
3 8.00 Ac.
2 LLA 557 (24) 5.38 Ac.±
(18) 1.37 Ac.
(22) 1.16 Ac.±
42R/S28
31R/S73 (21) 7.92 Ac.
31R/S73 (19) 2.97 Ac.
LLA 285 (23) 12.97 Ac.±
TPM 224 (20) 1.20 Ac.
32R/S94 (31)
32R/S62
LLA 1166 (30) 10.93 Ac.±
7P/M89–1&A
7P/M89–2
1–41

1.	S35°27'28"W	3.84'
2.	N54°32'32"W	44.77'
3.	S35°37'30"W	8.21'
4.	N47°37'05"E	30.00'
5.	N43°30'19"E	50.00'

220–04 & 05 RS	7–23–99
220–30 & 31 LLA	2–24–00
220–31 RS	3–23–00
ST NAME CORR	10–8–04
220–28 PTN TO RD	4–21–05
220–22 RS	5–6–13
REVISION	DATE

1955-62

NOTE: This Map Was Prepared For Assessment Purposes Only , No Liability Is Assumed For The Accuracy Of The Data Delineated Hereon.

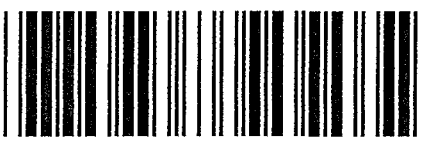
CARNE HUMANA RANCHO, R.M. BK. D PAT., PG. 127
LODI HOME TRACT, R.M. BK. 1, PG. 41

22–22

Environmental

Cover Sheet

APN	022 - 220 - 028 - 000
Permit #	
Program	Well
DocType	Pmt
Street #	3000
Street Name	St Helena Hwy
Year	1997



028

DATE 7/14/97
FEE # 119.00
RECEIPT NO. #5296
BY DR
ck. 9914

A.P.# 22-220-029
RECORD # 96-10027

NAPA COUNTY
DEPT. OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A WATER WELL

NAME Norm Alienbaugh (Owner) ADDRESS 1157 Lodi Lane (Job Location)

NAME Pulliam Drilling (Well Driller) PHONE # 224-9396 ADDRESS 2877 Piedmont Ave.

TYPE OF WORK
New Class I PERMIT ✓ Test Hole Date Called In _____
New Class II PERMIT _____ U.S.G.S. Map Received _____
Well Reconstruction _____ Well Deepening _____ Horizontal Well _____
Well Destruction _____ High Hazard _____ Low Hazard _____ Hand Dug _____

PROPOSED USE
DOMESTIC ON SITE ONLY ✓ IRRIGATION _____ INDUSTRIAL _____ MUNICIPAL _____
TEST WELL _____ HOT WATER _____ (D.O.G. Clearance _____) OTHER _____

Sewage Disposal System (existing or proposed) Public _____ Individual ✓ Private _____
Distance from well to any part of nearest sewage disposal system 140 feet.
Septic System Location Determined By: Owner
Plot plan of well location received Yes County road setback 32 ft. from centerline.

WORKER'S COMPENSATION COVERAGE: (Check one of the following)

✓ A certificate of current Worker's Compensation Insurance coverage is presently on file with this office.

___ A certificate of current Worker's Compensation Insurance is being filed with this application.

___ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws in California.

****

TERMS OF PERMIT

1) Call at least 24 hours in advance to schedule an inspection.
2) Prior to receiving a Final Clearance on the well, a copy of the Department of Water Resources "Water Well Drillers Report" (DWR-188) must be returned to our Department.

Old Wells to be Destroyed: _____

Other Remarks: - No hay mat sites per hay mat map.
- Not to be issued until further site check/meeting with driller for setbacks 7/14/97
- See attached Conditions of approval.

Bill Pulliam
Signature of Applicant

7-14-97
Date

****

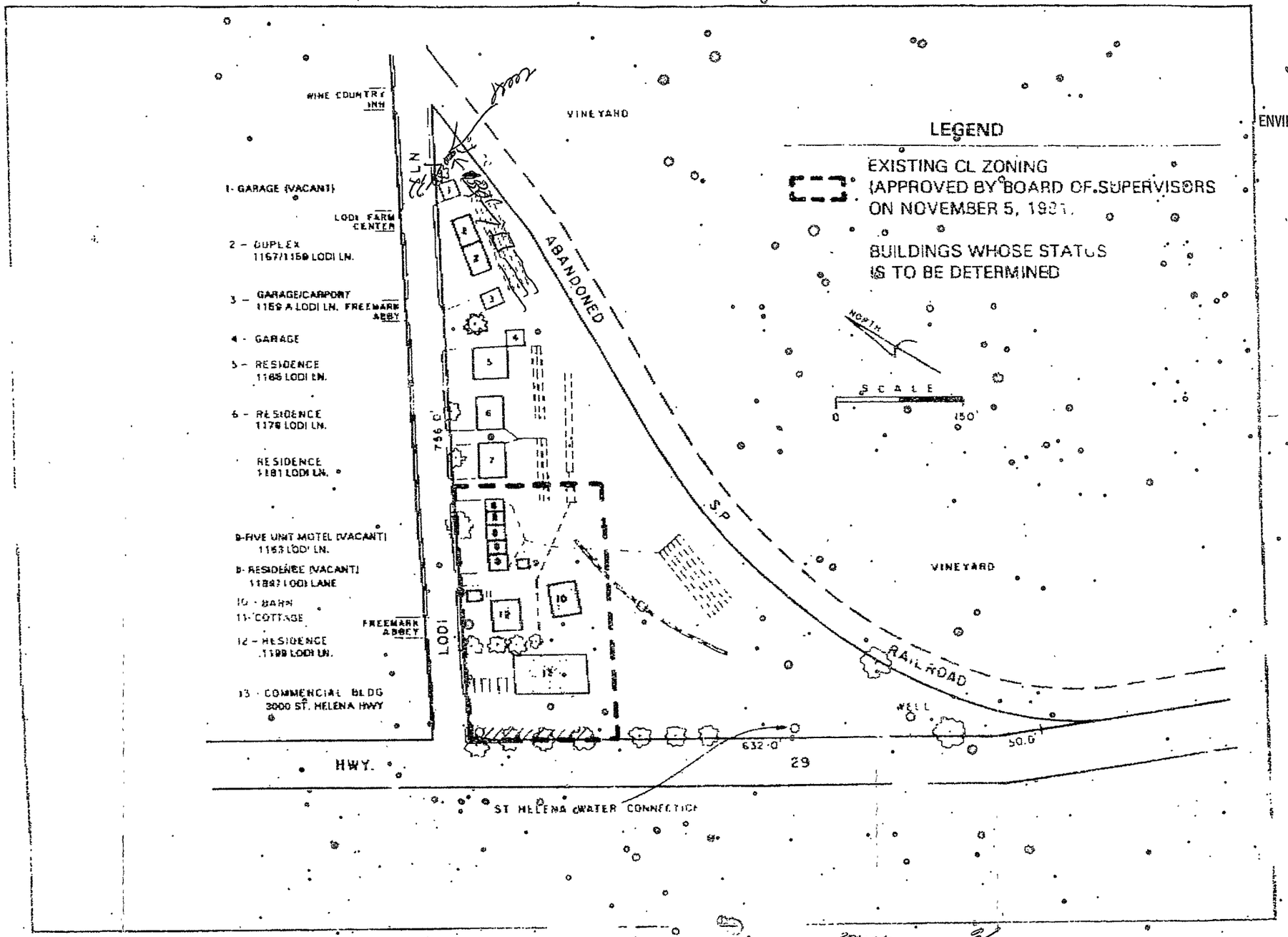
FOR OFFICE USE ONLY

	Date	By	CONDITIONS OF APPROVAL/Remarks
City Clearance			(1) Well may not go on-line until all testing is done.
Pub. Works Clearance			(2) 50-foot seal required
Pre-Inspection			(3) Well may not be placed on line until septic work done & inspected by this Dept see letter 7/17/97
Class II Approval			
Permit Issued	7/28/97	JM	Setbacks to sewer OK - physically located
Const. Insp.	7/30/97	(MP)	10 5/8" bore & 5" casing - bore to 51'
Well Log Rec.		JMP	
Final Insp.			

White-Office Yellow-Owner Pink-Contractor
EHM Form Letter#6 / 12-14-88

MEYER CERTIFICATES OF PRESENT EXTENT OF LEGAL NON-CONFORMITY

RECEIVED
JUL 14 1997
DEPT. OF
ENVIRONMENTAL MANAGEMENT



Environmental

Cover Sheet

APN	022 - 220 - 028 - 000
Permit #	
Program	Well
DocType	COR
Street #	3000
Street Name	St Helena Hwy
Year	2002

well
cor

NORMAN ALUMBAUGH CO., INC.

RECEIVED

MAR 2 5 2002

DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT

March 21, 2002

Kim Withrow
Environmental Health Specialist
Napa County
Dept. of Environmental Management
1195 Third Street, Rm #101
Napa, CA 94559-3082

Re: Water System, 1159 Lodi Lane, St. Helena

Dear Ms. Withrow:

Regarding your letter of March 18, 2002, I would like to keep this well for irrigation of the property and not destroy it. It will serve the location as a drip system when I move the house to that area of the property.

Sincerely,

Norman G. Alumbaugh

P.O. Box 200 • Pope Valley, CA 94567 • (707) 965-3238 • Fax (707) 965-3237

PLOT PLAN

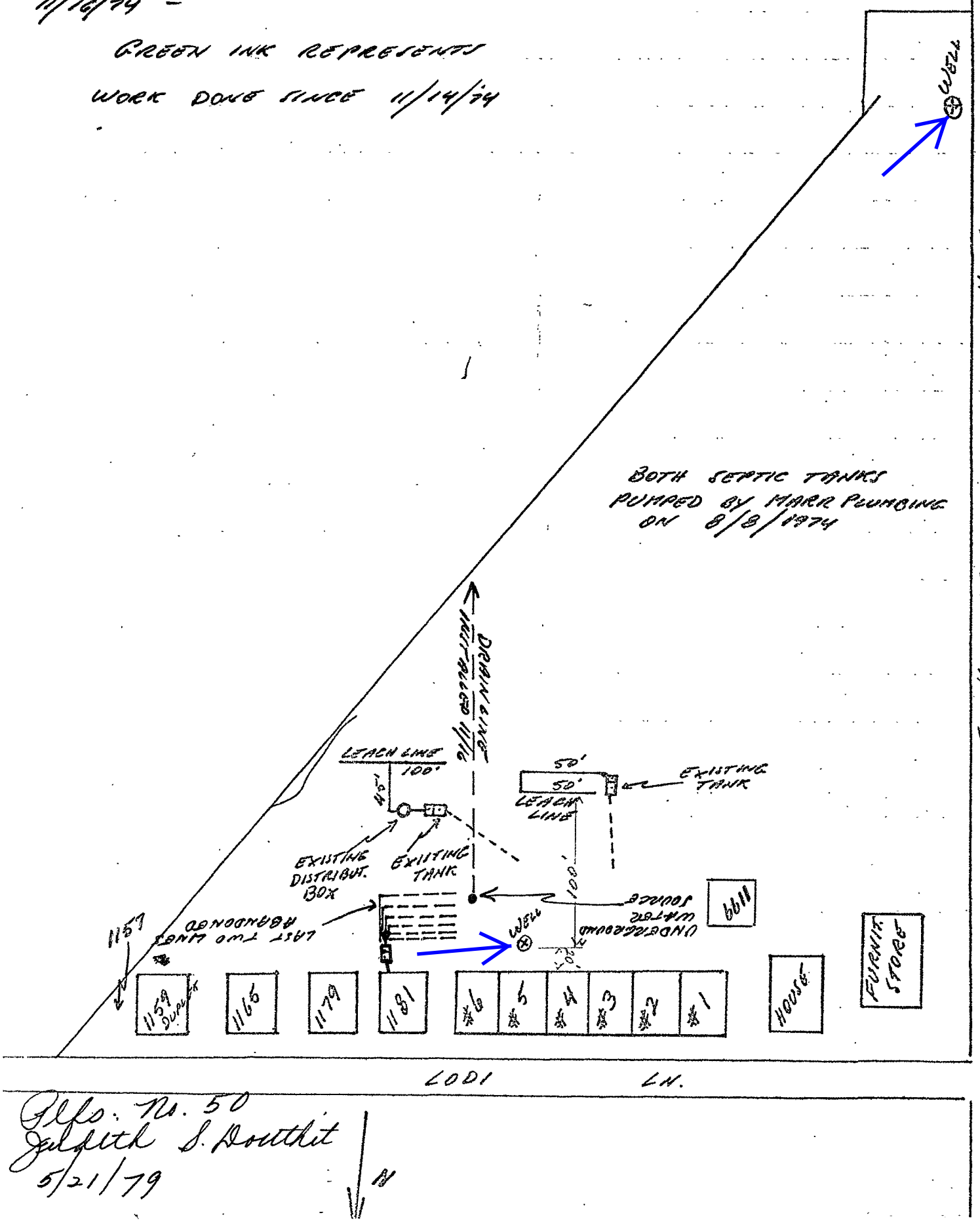
A.P. # 22-220-01

8/8/74

11/16/74 -

GREEN INK REPRESENTS

WORK DONE SINCE 11/14/74



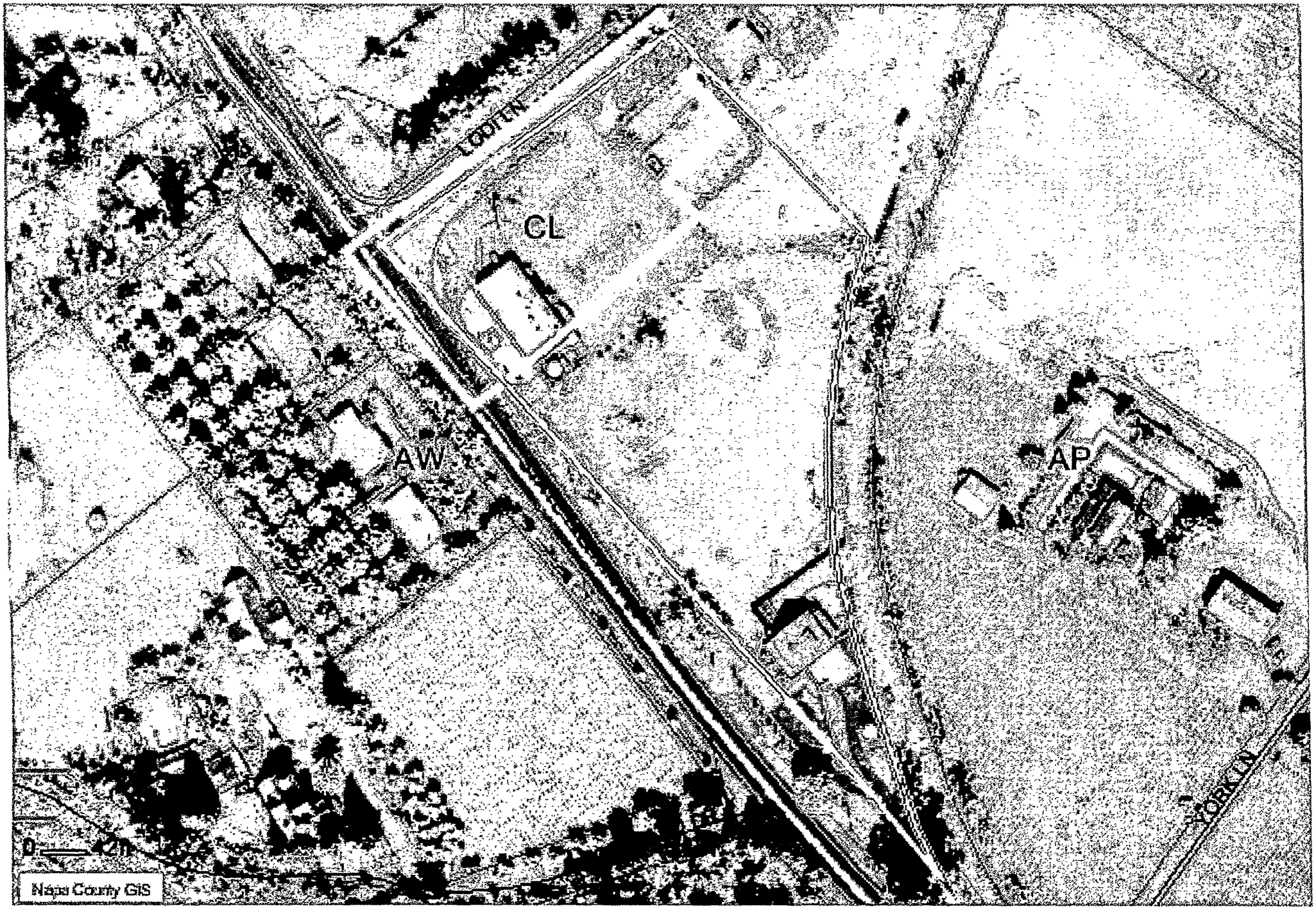
Plo. No. 50
Judith S. Douthit
5/21/79

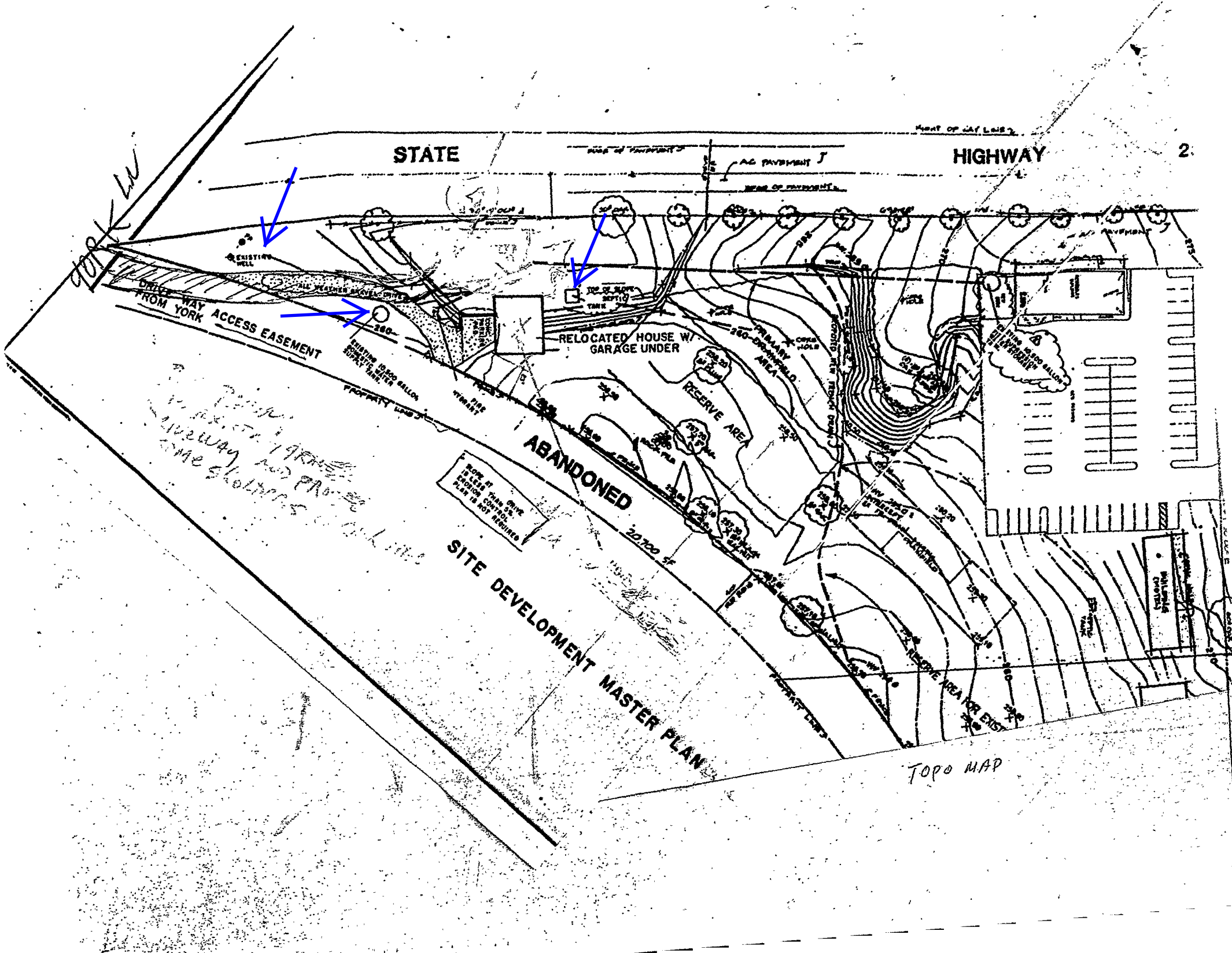
N

Planning

Cover Sheet

APN	022-220-028-000
Permit #	P04-0181
Program	USE
DocType	PLNS
Street #	
Street Name	
Year	


CL
AW
AP
0
Napa County GIS


STATE
HIGHWAY
EXISTING WELL
DRIVE WAY ACCESS EASEMENT FROM YORK
RELOCATED HOUSE W/ GARAGE UNDER
PRIMARY DRAINFIELD AREA
RESERVE AREA
ABANDONED
20700 sf
SITE DEVELOPMENT MASTER PLAN
TOPO MAP

Environmental

Cover Sheet

APN	022 - 220 - 028 - 000
Permit #	
Program	Well
DocType	pmt
Street #	3000
Street Name	St Helena Hwy
Year	1971

HEALTH DEPT. USE ONLY
FEE: 12.00
DATE: 8-9-71
RECEIPT NO:
BY:

OLD WELL (AD)

22-220-01
A.P. #

NAPA COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH

APPLICATION & PERMIT TO CONSTRUCT
A WATER WELL
(ORDINANCE #)

NAME GEO. MOSEBACK (Owner) ADDRESS LODI LN. (Job Location) DATE 8-9-71

NAME HAMBLIN DRILLING CO (Well Driller) ADDRESS 470 CLOVERDALE CONCORD

TYPE OF WORK

NEW WELL	X	RECONDITIONING		DEEPENING	
TEST HOLES		DESTROYING		OTHER	
TYPE I PERMIT		TYPE II PERMIT		FEE	

PROPOSED USE

DOMESTIC	X	IRRIGATION		INDUSTRIAL		MUNICIPAL	
TEST WELL		OTHER					

Sewage Disposal On Site (Existing or Proposed) Public ___ Individual ~~X~~ ~~Private~~ ___
Distance from well to any part of nearest sewage disposal system 100 feet.
(Sketch of site to accompany application.

TYPE OF EQUIPMENT TO BE USED

Rotary ___ Cable X Hand Dug ___ Other ___

CONSTRUCTION PROPOSED

Diameter of casing 8" Material STEEL Annular Space: Size 2"
Sealed with: Concrete ___ Grout X Neat Cement ___ Puddled Clay ___ Other ___
Conductor Casing: Yes ___ No X Material ___
Chlorination By: Owner X Pump Co ___ Driller ___

X A P Rues (SIGNATURE OF APPLICANT) ___ (DATE)

HEALTH DEPARTMENT USE ONLY

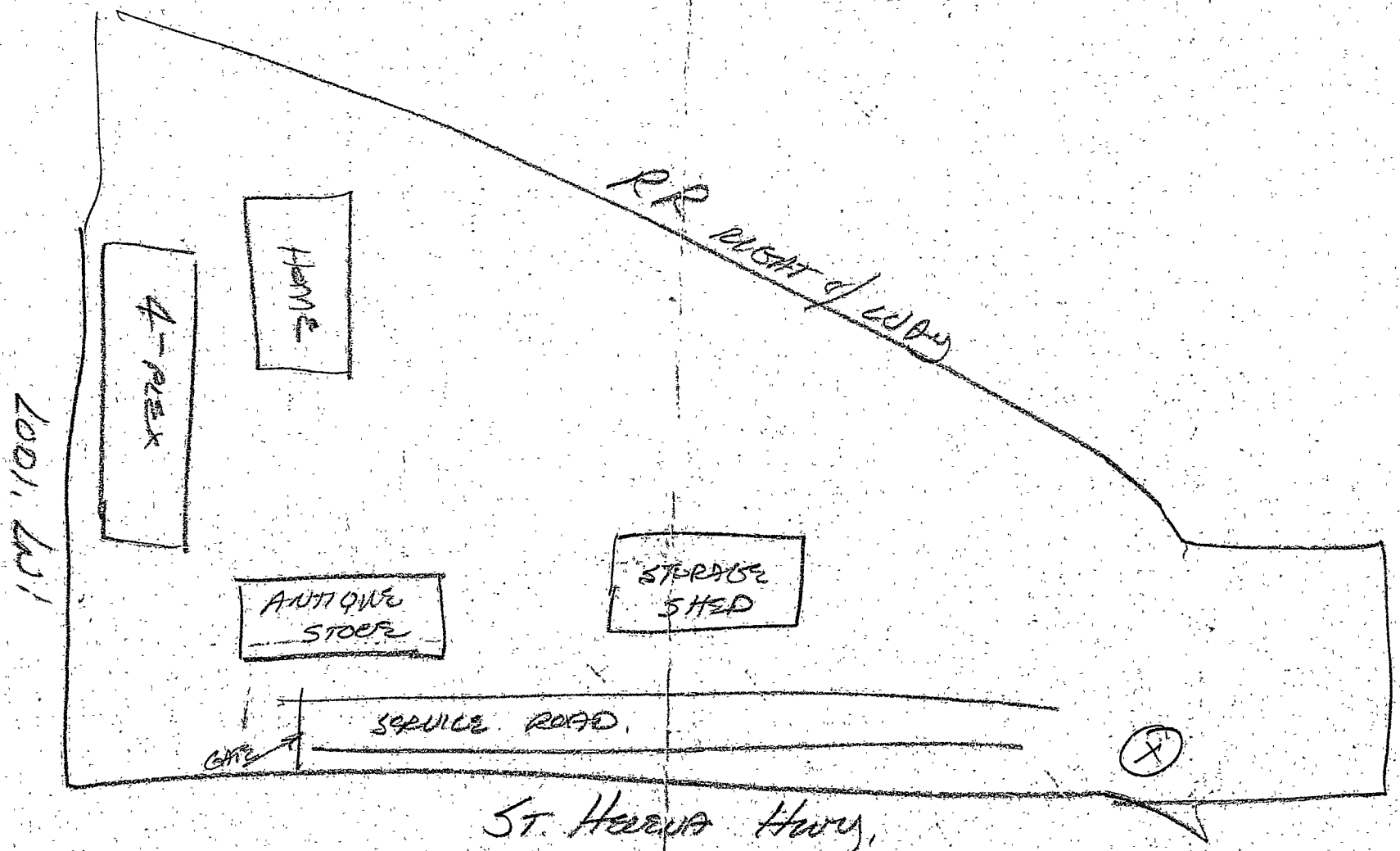
	Date	Initial	Remarks
Pre-Inspection			
Const. Inspection	9-27	WM	OK
Final Inspection	10-7-71	WM	OK ON FINAL.

PUMP AND STORAGE

Type of Pump: Shallow ___ Jet ___ Turbine ___ Submersible ___
Type of Storage: Pressure ___ gallons; Gravity ___ gallons
DESCRIBE ___
Well Cover Satisfactory Yes ___ No ___

Pink - Health Dept. Copy
Blue - Well Driller
Yellow - Owner

Form WWD/10/20/70.


R.R. RIGHT of WAY
HOME
4-PLEX
ZODIAC
ANTIQUE STORE
STORAGE SHED
SERVICE ROAD
GATE
ST. HELENA Hwy.

Environmental

Cover Sheet

APN	022-130-023-000
Permit #	
Program	WELL
DocType	WL
Street #	3022
Street Name	ST HELENA HWY
Year	1996

QUADRUPLICATE
For Local Requirements

Page 1 of 1

Owner's Well No. _____

Date Work Began 8-12-96, Ended 9-12-96

Local Permit Agency Napa County Dept. of Environmental Mgmt

Permit No. 42661 Permit Date 7-24-96

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 547486

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 68 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	1	Topsoil
1	15	Boulders & large rock
15	20	Gravel imbedded,brown clay
20	28	Boulders & large gravel
28	35	Red clay
35	68	Rock Imbedded, brown clay
68	120	Fract. rock, black, grey,some brown
120	140	Grey & brown clay-some rock
140	205	Fract. rock-grey, some black
205	265	Fract. rock-grey, brown,black some brown clay
265	305	Multi-colored rock-fract.
305	335	Rock imbedded grey clay
335	345	Hard grey rock
345	370	Frect. grey clay
370	410	Grey shale-some hard grey rock
410	445	Grey clay with layers of grey & black rock
445	450	Grey clay

RECEIVED
SEP 23 1996
ENVIRONMENTAL MANAGEMENT

TOTAL DEPTH OF BORING 450 (Feet)
TOTAL DEPTH OF COMPLETED WELL 450 (Feet)

WELL OWNER

Name [redacted]
Mailing Address [redacted]
[redacted] ZIP

WELL LOCATION

Address Lodi Lane
City St. Helena
County Napa
APN Book 022 Page 130 Parcel 015
or Township ___ Range ___ Section ___
or Latitude ___ DEG. MIN. SEC. NORTH Longitude ___ DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)
___ MONITORING
WATER SUPPLY
___ Domestic
___ Public
X Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Rotary FLUID Mud

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 70 (Ft.) & DATE MEASURED 9-12-96
ESTIMATED YIELD* 45 (GPM) & TEST TYPE Airlift
TEST LENGTH 11 (Hrs.) TOTAL DRAWDOWN complete
** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	60	14"	X				F480	6"	cl 200	
60	80			X						.030
80	100		X							
100	120			X						.030
120	140		X							
140	160			X						.030

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			
50	51		X		
51	450			X	Pea gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Doshier-Gregson Inc (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 5365 Napa-Vallejo Hwy CITY American CAnyon, STATE Ca ZIP 94589

Signed [signature] WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED 9/16/96

C-57 LICENSE NUMBER 258826

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

QUADRUPLICATE
For Local Requirements

Page 2 of 2

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 547487

Owner's Well No. _____
Date Work Began 8-12-96 Ended 9-12-96
Local Permit Agency Napa County Dept. of Environmental Mgmt
Permit No. 42661 Permit Date 7-24-96

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*	blank	screen	slot size
		continued from prior page			
160	180		x		
180	200			x	.030
200	220		x		
220	240			x	.030
240	260		x		
260	320			x	.030
320	340		x		
340	360			x	.030
360	380		x		
380	400			x	.030
400	430		x		
430	450			x	.030
		cap			

RECEIVED
SEP 23 1996
ENVIRONMENTAL MANAGEMENT

TOTAL DEPTH OF BORING _____ (Feet)
TOTAL DEPTH OF COMPLETED WELL _____ (Feet)

WELL OWNER

Name [redacted]
Mailing Address [redacted]
CITY [redacted] STATE [redacted] ZIP

WELL LOCATION

Address Lodi Lane
City St. Helena
County Napa
APN Book 022 Page 130 Parcel 015
or Township _____ Range _____ Section _____
or Latitude _____ DEG. MIN. SEC. NORTH Longitude _____ DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
___ Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD _____ FLUID _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____
ESTIMATED YIELD* _____ (GPM) & TEST TYPE _____
TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)
** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Doshier-Gregson Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

5365 Napa-Vallejo Hwy — ADDRESS
American Canyon, Ca 94589 — CITY STATE ZIP

Signed Raymond Webster — WELL DRILLER/AUTHORIZED REPRESENTATIVE
9/19/96 — DATE SIGNED
258826 — C-57 LICENSE NUMBER

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOT FOR PUBLIC DISCLOSURE CONFIDENTIAL WATER CODE SECTION 13752

Environmental

Cover Sheet

APN	022 -130 -023 - 000
Permit #	
Program	WELL
DocType	PMT
Street #	3022
Street Name	ST HELENA HWY
Year	1978

HEALTH DEPT. USE ONLY

FEE 20.00

DATE 1/16/78

RECEIPT NO. 4856

BY Swanson

22-730-20

A.P. NO. ~~22-730-20~~

NAPA COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH

APPLICATION & PERMIT TO CONSTRUCT A WATER WELL

NAME Herb's Candle Factory (OWNER) ADDRESS 3020 St. Helena Hwy. St. Helena (JOB LOCATION) DATE 1/16/78

NAME Dorbier & Swanson (WELL DRILLER) ADDRESS Napa

TYPE OF WORK
NEW WELL ✓ RECONDITIONING ____ DEEPENING ____
TEST HOLES ____ DESTROYING ____ OTHER ____
TYPE I PERMIT ✓ TYPE II PERMIT ____ FEE ____

PROPOSED USE
DOMESTIC ✓ IRRIGATION ____ INDUSTRIAL ____ MUNICIPAL ____
TEST WELL ____ OTHER ____

Sewage disposal on site (existing or proposed) Public ____ Individual ____ Private ____
Distance from well to any part of nearest sewage disposal system ____ feet
(Sketch of site to accompany application.)

TYPE OF EQUIPMENT TO BE USED
Rotary ✓ Cable ____ Hand Dug ____ Other ____

CONSTRUCTION PROPOSED
Diameter of casing 6" Material plastic Annular Space: Size 2"
Sealed with: Concrete ____ Grout ✓ Neat Cement ____ Puddled Clay ____ Other ____
Conductor Casing: Yes ____ No ✓ Material ____
Chlorination by: Owner ✓ Pump Co. ____ Driller ____

(Theresa M. Dorbier) (SIGNATURE OF APPLICANT) 1-16-78 (DATE)

OFFICE USE ONLY

	DATE	BY	REMARKS
PRE-INSPECTION			
CLASS II APPROVAL			
PERMIT ISSUE	17 Jan 78	JBMc	
CONST. INSPECTION	27 Jan 78	JBMc	36' Seal
FINAL INSPECTION			
FINAL APPROVAL			

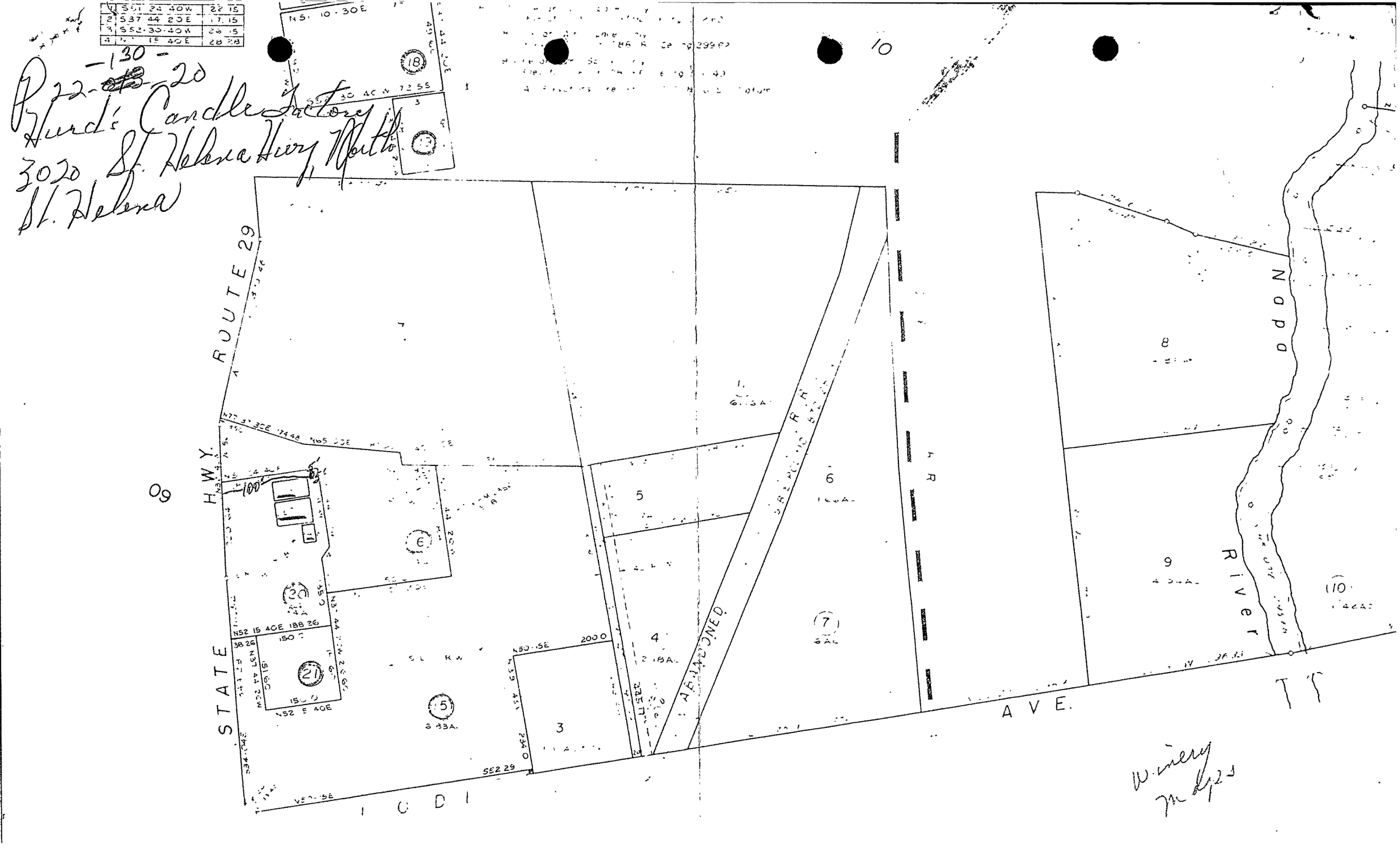
PUMP & STORAGE

Type of Pump: Jet ____ Submersible ____ Other ____ GPM ____
Type of Storage: Gallons ____ Pressure ____ Gravity ____
Well cover satisfactory? Yes ____ No ____

Remarks ____

H 91

E. H. Copy


-130-
P22-20
Hurd's Candle Factory
3020 S. Helena Hwy North
St. Helena
ROUTE 29
HWY.
STATE
ABANDONED R.R.
R.R.
DODON
River
AVE.
09
10
11
18
17
13
12
21
6
5
4
3
7
8
9
(10)
(11)
(5)
N51° 10' 30E
N77° 30E 1748
N65 00E
N52 15 40E 188 26
N52 E 40E
N50° 15E 200 0
N52 29
N52° 15E
N37° 44' W 2396
N37° 44' 00E 1510
N37° 44' 00E 2340
N37° 44' 00E 2340
N37° 44' 00E 2340

Environmental

Cover Sheet

APN	022-130-023-000
Permit #	
Program	WELL
DocType	PMT
Street #	3022
Street Name	ST HELENA HWY
Year	1996

DATE 5/24/96
FEE 119.00
RECEIPT NO. 42666
BY JRT

A.P.# 022-130-015
RECORD # 5984

NAPA COUNTY
DEPT. OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A WATER WELL

NAME Freemark Abbey Winery (Owner) ADDRESS Lodi Ave, St. Helena (Job Location)
PHONE # 707-226-9698
NAME Doshier-Gregson Inc (Well Driller) ADDRESS 5365 Napa-Vallejo Hwy American Canyon, Ca 94589

TYPE OF WORK
New Class I PERMIT X Test Hole Date Called In
New Class II PERMIT U.S.G.S. Map Received
Well Reconstruction Well Deepening Horizontal Well
Well Destruction High Hazard Low Hazard Hand Dug

PROPOSED USE
DOMESTIC X IRRIGATION X INDUSTRIAL MUNICIPAL
TEST WELL HOT WATER (D.O.G. Clearance) OTHER

Sewage Disposal System (existing or proposed) Public Individual Private X
Distance from well to any part of nearest sewage disposal system 150' feet.
Septic System Location Determined By: County File and Freemark Abbey
Plot plan of well location received County road setback ft. from centerline.

WORKER'S COMPENSATION COVERAGE: (Check one of the following)
X A certificate of current Worker's Compensation Insurance coverage is presently on file with this office.
___ A certificate of current Worker's Compensation Insurance is being filed with this application.
___ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws in California.

****

TERMS OF PERMIT

1) Call at least 24 hours in advance to schedule an inspection.
2) Prior to receiving a Final Clearance on the well, a copy of the Department of Water Resources "Water Well Drillers Report" (DWR-188) must be returned to our Department.

Old Wells to be Destroyed:
Other Remarks:

Raymond Webster 7/23/96
Signature of Applicant Date

****

FOR OFFICE USE ONLY

	Date	By	Remarks
City Clearance			
Pub. Works Clearance			
Pre-Inspection			
Class II Approval			
Permit Issued	7/25/96	SS	
Const. Insp.	8/12/96	(MWP)	14" BORE/6" CASING TO 58'
Well Log Rec.			
Final Insp.			

White-Office Yellow-Owner Pink-Contractor

Planning

Cover Sheet

APN	022-220-029-000
Permit #	51-62
Program	USE
DocType	ASM
Street #	
Street Name	
Year	

APPLICATION FOR LAND USE PERMIT

Napa County Planning Commission
1436 POLK STREET
NAPA, CALIFORNIA

Geo. H. Mosebach — Name of Owner
51-62 — File No.

Applicant

Date filed: 14 May 62

Sheet No. 1

Date of Hearing: 4 JUNE 62

OFFICE FILL IN

ZONING DISTRICT: C3 ASSESSOR'S MAP BOOK: 22-220-01 PAGE NO.:

REQUEST: to build duplex dwelling in a C-3 Zone

APPLICANT FILL IN

APPLICANT'S NAME: Geo H Mosebach PHONE: WO 3-3193

ADDRESS: Cor Lodi Road + Calistoga St Helena Highway

STATUS OF APPLICANT'S INTEREST IN PROPERTY: owner

OWNER'S NAME: Same as above

ADDRESS: Rt. 1, Box 485, St. Helena PHONE:

DESCRIPTION OF PROPERTY: 500 feet N.E. of Calistoga St Helena Highway or Highway 29 on East Side Lodi Road

240 ft. fronting on south side of Lodi Lane approx. 600 ft. east St. Helena Highway

EXPLAIN FULLY HARDSHIP INVOLVED, OR REASON FOR SPECIAL USE:

2 FAMILY Dwelling IN C3 ZONE
want to take down existing house & Chicken house and build duplex 2 family unit.

The above statements are certified by the undersigned to be correct.

Geo H Mosebach
Signature of Applicant

OFFICE USE

NOTE: Please submit herewith a check or money order in the amount of Ten Dollars ($10.00) payable to County of Napa; also a detailed plot plan showing the location of existing and proposed structures on your property and on the adjacent properties.

$10.00 8447
Receipt No.

By Alexander S. Byington
PLANNING DEPARTMENT

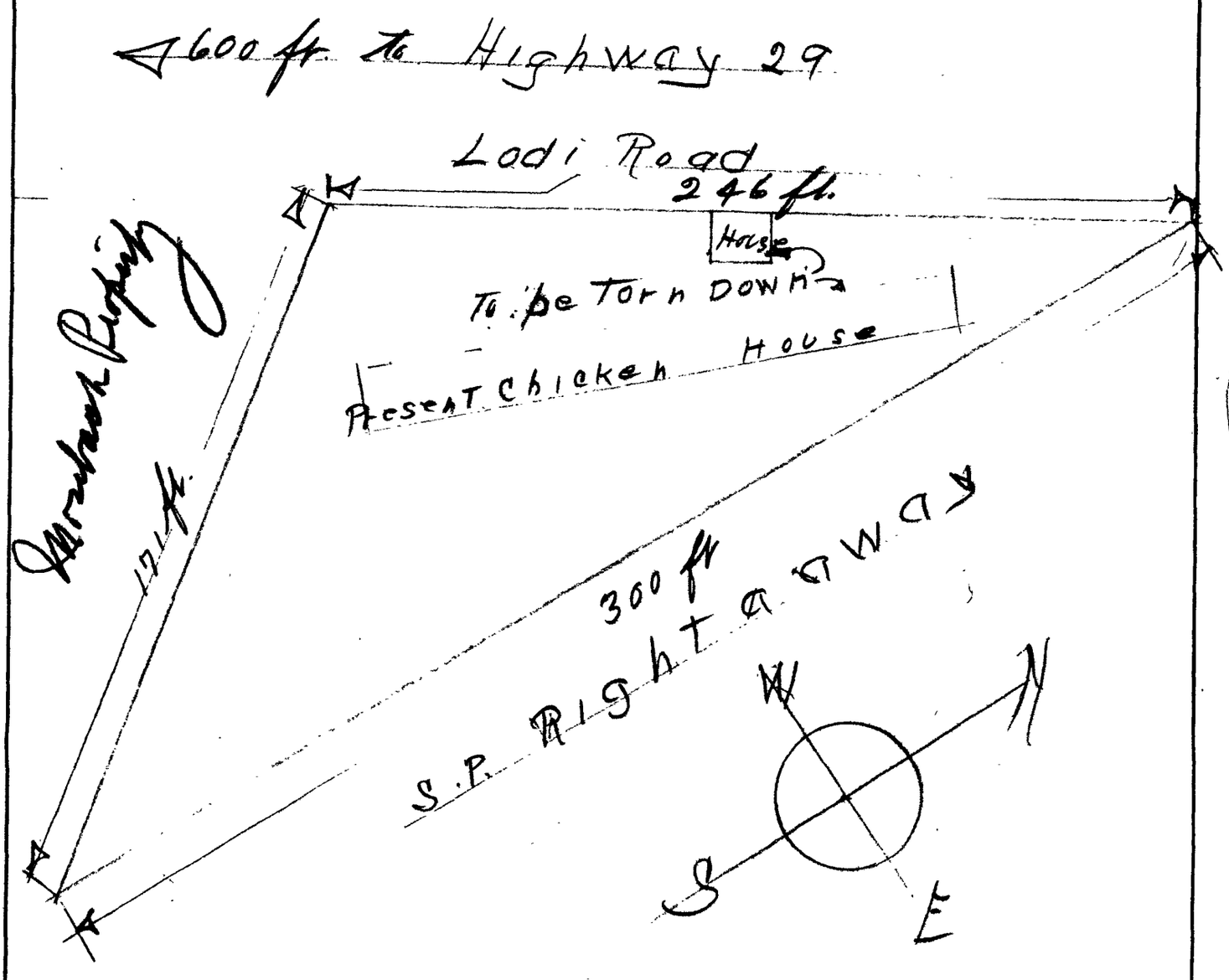
Sheet No. 2

PLOT PLAN FOR
LAND USE PERMIT APPLICATION

Geo. H. Mosebach 51-62
Name of Owner File No.

APPLICANT REQUIRED TO FURNISH THE FOLLOWING INFORMATION ON PLOT PLAN:

1. Show dimensions of property.
2. Locations of improvements on applicant's property.
3. Names of adjoining property owners.
4. Name of Street.
5. Approximate locations of improvements on adjacent property.
6. On extreme grades show direction of slope.



APPLICATION FOR LAND USE PERMIT

Napa County Planning Commission
1436 POLK STREET
NAPA, CALIFORNIA

Geo. H. Mosebach
Name of Owner

File No.

Applicant

Date filed:

Sheet No. 1

Date of Hearing:

OFFICE FILL IN

ZONING DISTRICT: C 3 ASSESSOR'S MAP BOOK: PAGE NO.:

REQUEST: to build duplex 2 fam. dwelling

APPLICANT FILL IN

APPLICANT'S NAME: Geo. H Mosebach PHONE: WO 3-3193

ADDRESS: Cor Lodi Road + Highway 29

STATUS OF APPLICANT'S INTEREST IN PROPERTY: owner

OWNER'S NAME: Geo. H Mosebach

ADDRESS: Rt 1 Box 485 St Helena Cal PHONE:

RECEIVED
JUL 15 1962
Napa County Planning Commission

DESCRIPTION OF PROPERTY:

EXPLAIN FULLY HARDSHIP INVOLVED, OR REASON FOR SPECIAL USE:

2 Family Dwelling in C 3 Zone
want to clear land and build
duplex

The above statements are certified by the undersigned to be correct.

Geo. H Mosebach
Signature of Applicant

OFFICE USE

NOTE: Please submit herewith a check or money order in the amount of Ten Dollars ($10.00) payable to County of Napa; also a detailed plot plan showing the location of existing and proposed structures on your property and on the adjacent properties.

$10.00
Receipt No.

By
PLANNING DEPARTMENT

Sheet No. 2

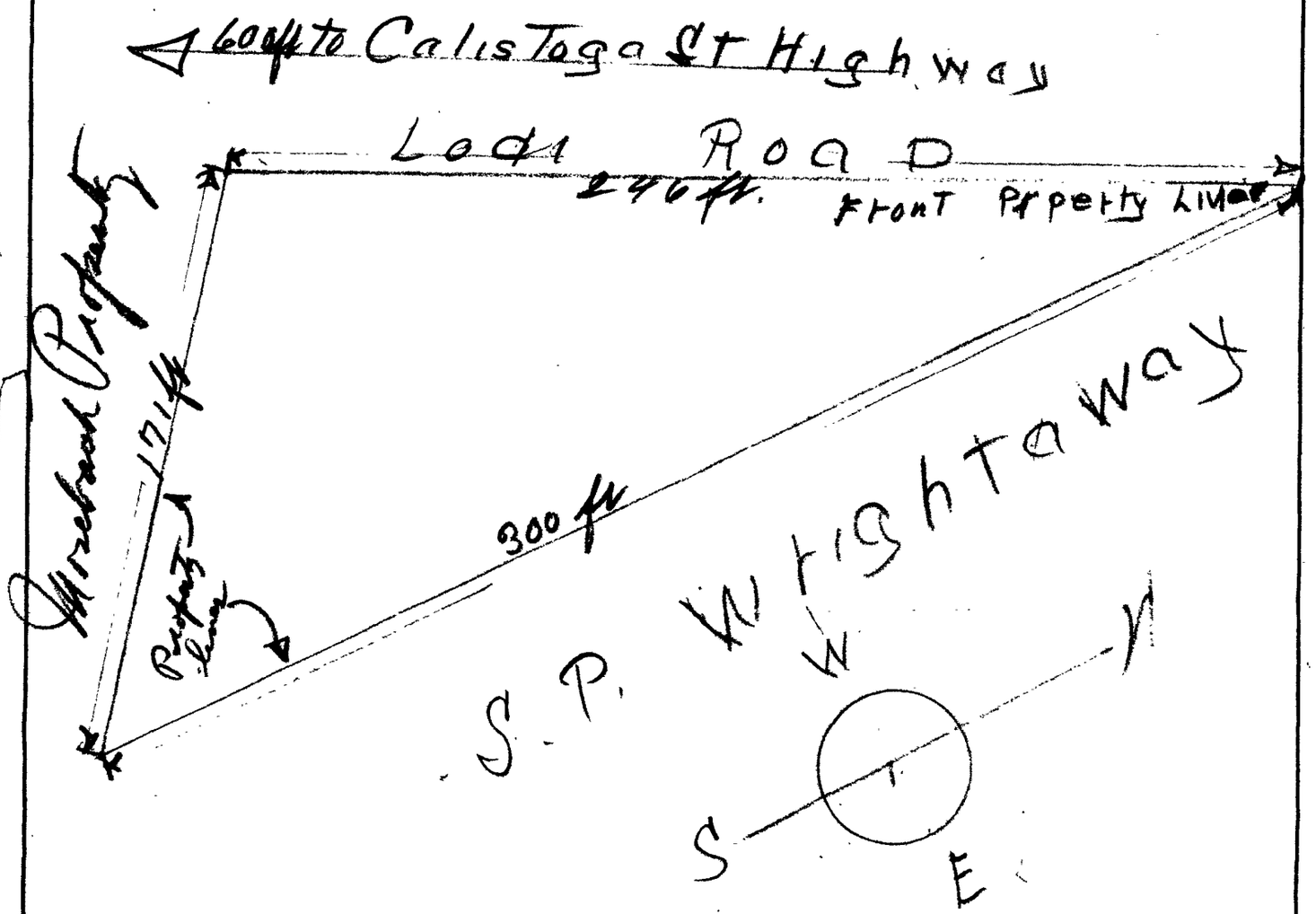
PLOT PLAN FOR
LAND USE PERMIT APPLICATION

Geo H. Monteith
Name of Owner

File No.

APPLICANT REQUIRED TO FURNISH THE FOLLOWING INFORMATION ON PLOT PLAN:

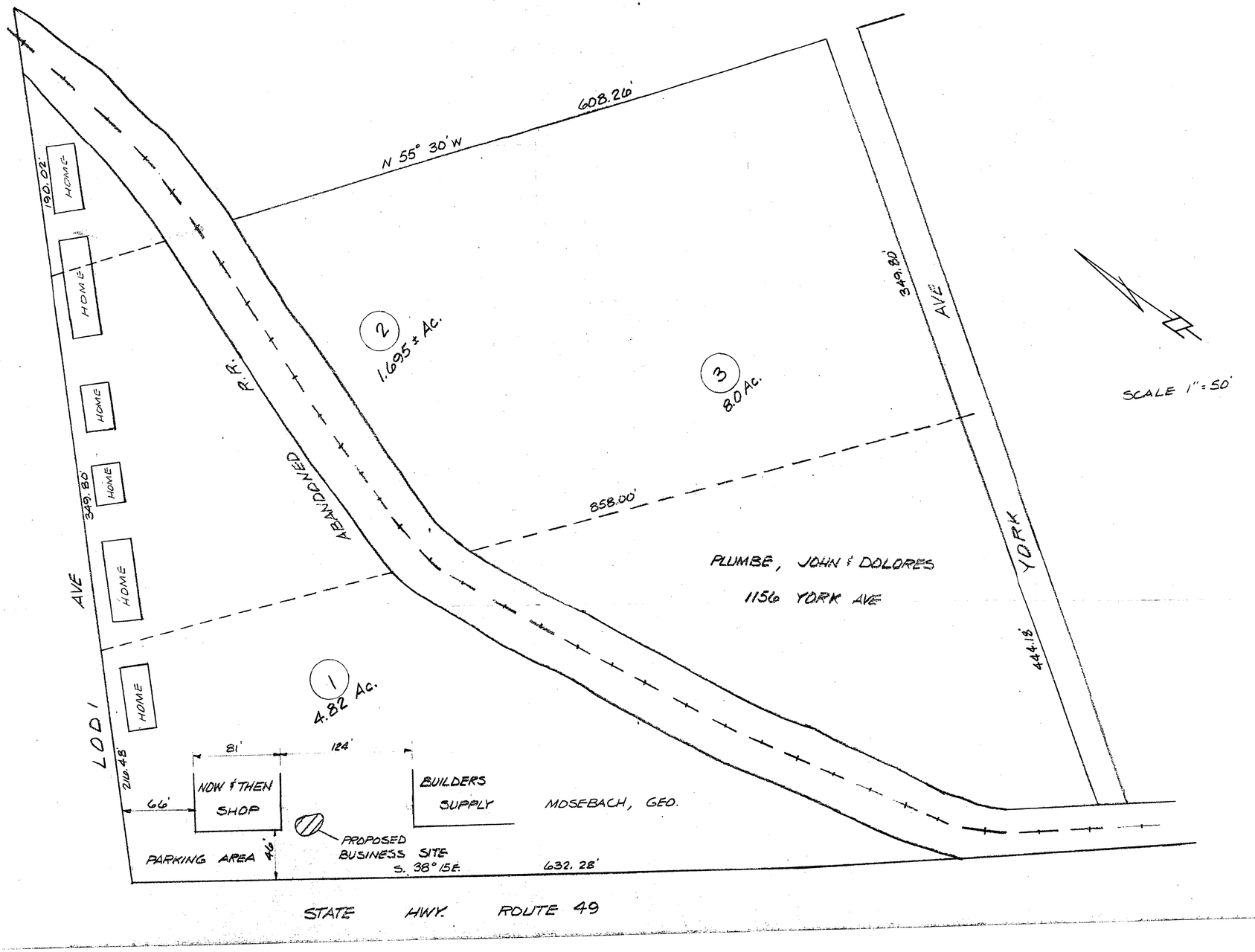
1. Show dimensions of property.
2. Locations of improvements on applicant's property.
3. Names of adjoining property owners.
4. Name of Street.
5. Approximate locations of improvements on adjacent property.
6. On extreme grades show direction of slope.



Planning

Cover Sheet

APN	022-220-028-000
Permit #	347071
Program	USE
DocType	PLNS
Street #	1320
Street Name	Lincoln Ave
Year	


608.26'
N 55° 30' W
190.02'
HOME
HOME
HOME
HOME
HOME
349.80'
AVE
LODI
R.R.
ABANDONED
2
1.695 ± AC.
3
8.0 AC.
1
4.82 AC.
858.00'
349.80'
AVE
YORK
444.18'
PLUMBE, JOHN & DOLORES
1156 YORK AVE
SCALE 1" = 50'
81'
124'
210.48'
66'
NOW & THEN
SHOP
BUILDERS
SUPPLY
MOSEBACH, GEO.
PROPOSED
BUSINESS SITE
S. 38° 15 E.
PARKING AREA
46'
632.28'
STATE HWY. ROUTE 49

Application for building permit & certificate of occupancy

022-130-023

COUNTY OF NAPA

Date 11-30-72 № 16852/APP

Owner Freemark Abbey Winery Home Address _____ Phone 16

Job Address 3022 St. Helena Hwy No. Parcel No. 22-130-12

Contractor C. Overgaa & Co. State License No. 106793

Address 200 Parr Blvd. Richmond County License No. _____

Architect _____ Reg. No. _____ Address _____

LOT SIZE: _____ X _____ LOT _____ BLOCK _____ IN _____ TRACT

THE ABOVE NAMED PERSON HEREBY APPLIES FOR A BUILDING PERMIT TO PERFORM THE FOLLOWING WORK:

☑ New Construction of a: Winery

☐ Additions, Alterations, Repairs of a: _____

Value of Proposed Work	$	410,000
Permit and Issuance Fee	$	536.50
Plan Checking Fee	$	77.50
Strong Motion Tax	$	Exempt 190.75 28.70
TOTAL FEES	$	83 3.45

I hereby certify and agree if a permit is issued that all the provisions of the Building Codes and Zoning Ordinance, Fire Ordinance and Set-Back line requirements of the County of Napa, together with the California State Housing Law, will be complied with whether herein specified or not. And I hereby agree to save, indemnify and keep harmless the County of Napa against all liabilities, judgments, cost and expense which may in any way accrue against said County in consequences of the granting of this permit, or from the use of occuapncy of any sidewalk, street or sub-sidewalk placed by virtue thereof, and will in all things strictly comply with the conditions of my permit.

Show Plot Plan for Minor Work on another sheet.

Signed _____

Conservation, Development and Planning Department

Applicant or his Representative

INSPECTION RECORD

BUILDING	PLASTERING	PLUMBING	ELECTRICAL	HTG/COOLING	FIREPLACE
Prop. Lines 6-7-73	Wire ~~3-13-73~~	Partial 3-9-73	Rough 6-28-73	Ducts	Foundation
Excavation 11-27-72	Lath 8-10-73	Rough 3-28-73	Final 1-17-74	Gas Vent	Damper
1-31-73 Forms 12-29-72	Scratch	Water 6-28-73	Temp. Pole 12-5-72	Wall Htr.	Stack
9-15-73 1 pour 1-5-73 216.76	Brown	Gas Line	Meter Set 1-17-74	Furnace	
2 pour	Finish	Final 1-17-74			
3 pour 1-24-73		Meter Set 1-17-74			
Framing 2-22-73	6-11-73				
Wallboard	8-28-73				

underground fir line 6-11-73

sheetrock wall only 6-27-73

Tilt up form insp 4-10-73

partial ftg 12-14-72

Slab ready 3-28-73

Consult. or sales room doors 6-15-73

I certify that in the performance of the above work I shall not employ any person in violation of the Labor Code of California relating to Workmen's Compensation Insurance

CONTRACTORS SIGN BELOW

I certify that I am a licensed contractor and that my license is in full force and effect.

C. OVERAA & CO by

Contractor Authorized Agent

OWNER-BUILDER SIGN BELOW

I certify that I am exempt from the provisions of Chap. 9, Div. 3, B. and p. Code (Contractor's License Law) because: (check one)

- ☐ I am the owner of the above property and will personally perform the above work.
- ☐ I am the owner of the above property and I will contract to have all the above work performed by licensed contractors.
- ☐ I am the owner of the above property and will personally perform some of the above work and will contract with licensed contractors for balance of work.

_____ by _____

Owner's Signature Authorized Agent

DATE OF COMPLETION 1-17-74

Lending Agent: _____ Branch: _____ Address: _____

Bldg. Permit

COUNTY OF NAPA, CALIFORNIA

8141

No. 16852

APPLICATION FOR PLUMBING PERMIT

OWNER Freemark Abbey DATE Jan. 1973

JOB ADDRESS 3022 St. Helena Hwy CLASS OF BLDG Winery

HOME ADDRESS ____ PARCEL No. 22-130-12 16

If Home Owners Permit, Statement Below Must Be Signed.

Plumbing Contractor Bayliness State License No. ____

Address ____

The above named person hereby applies for a Plumbing Permit to:

☐ Install ☐ Repair or Replace in a ☐ New ☐ Occupied structure or area, plumbing as indicated below:

FIXTURES				FEES	
....	Bath Tubs	....	Refrigerators	16 Fixtures at $1.50	$ 24.00
....	Showers	....	Water Softeners	1 Water Distribution System $1.50	$ 1.50
4	Lavatories	....	Sand Traps	1 Water Heaters $1.50	$ 1.50
2	Kitchen Sinks	5	Floor Drains	1 Gas Piping System $1.50	$ 1.50
....	Floor Sinks	2	Urinals	.... Lawn Sprinkler Systems $3.00	$ ....
....	Slop Sinks	....	Drinking Fountains	.... Other explain	$ ....
....	Wash Trays	....	Dental Units	Issue Fee for Plumbing Permit $2.00	$ 2.00
....	Automatic Washers	....	Soda Fountains		
3	Water Closets	....	Miscellaneous	TOTAL FEES	$ 30.50
....	Dishwashers	....	TOTAL NO. OF FIXTURES		

I hereby certify and agree, if a permit is issued, that all the provisions of the Building and Plumbing Codes and the Zoning Ordinance, Fire Ordinance, and Set-Back line requirements of the County of Napa, together with the California State Housing Act, will be complied with whether herein specified or not: And I hereby agree to save, indemnify and keep harmless the County of Napa against all liabilities, judgments, cost and expenses which may in any way accrue against said county in consequences of the granting of this permit, or from the use of occupancy of any sidewalk, street or sub-sidewalk placed by virtue thereof, and will in all things strictly comply with the conditions of my permit.

If applying for a Home Owners Permit: I certify that I personally will do all of the work involved in the installation of the above and that I am the present owner and resident of the property where the installation will be made.

Home Owner Applicant

Rick Laughridge

Applicant or his Representative

Building Permit

No. 16852

COUNTY OF NAPA, CALIFORNIA

HEATING AND COOLING PERMIT

Nº 2152

OWNER Freemark Abbey Winery DATE March 2 1973

JOB ADDRESS 3022 St. Helena Hwy. No. CLASS OF BUILDING Winery

HOME ADDRESS ..... TELEPHONE .....

(If Home Owner's Permit, Statement Below Must Be Signed)

Contractor Hussmann San Francisco, Inc. State License No. 16

Address 189 Constitution Dr. Menlo Park 94025 22-130-12

The above named person hereby applies for a Heating Permit to:

☐ Install ☐ Repair or Replace in a ☐ New ☐ Occupied structure or area, heating as indicated below:

1 Carrier 58GA 125 → 125 000 BTU input 7.50
2 " 58CH 100,000 BTU - 4.00 ea 8.00

1 Carrier 5FG6-30hp condensing unit - 10.00
1 " 38GRC06 3 ton cond. unit 7.50
4 Fan coil units 12.00
2 Exhaust fans @ 2.00 4.00

FEES			
Each Heating Appliance	$ 2.00	Industrial Ventilation, Forced Air	4.00
Each Air Outlet (Duct System) Each	.25	Compressors under 20 H.P. & 500,000 B.T.U. or less	3.00
Each Combustion Product Vent	1.00	Compressors over 20 H.P. & 50,001-1,000,000 B.T.U.	7.50
Kitchen/Toilet on 1 Dependent Vent	2.00	Compressors over 50 H. P. & 1,000,001 B. T. U.	15.00
Commercial Hood and Vent (Gravity)	5.00	Each Separate Cooling Tower	2.00
Commercial Hood and Vent (under 4000 C.F.M.)	7.00	Evaporative Coolers	2.00
Commercial Hood and Vent (over 4000 C.F.M.)	10.00	Issue Fee	3.00
Industrial Ventilation, Gravity	2.00	Other	
		TOTAL FEE DUE	52.00

I hereby certify and agree, if a permit is issued, that all the provisions of the Building and Plumbing Codes plus the Heating and Comfort Cooling Code, and the Zoning Ordinance, Fire Ordinance, and Set-Back line requirements of the County of Napa, together with the State Housing Law and Building Regulations, will be complied with whether herein specified or not. And I hereby agree to save, indemnity and keep harmless the County of Napa against all liabilities, judgements, cost and expenses which may in any way accrue against said County in consequences of the granting of this permit, or from the use of occupancy of any sidewalk,street or sub-sidewalk placed by virtue thereof, will in all things strictly comply with the conditions of my permit.

If applying for a Home Owners Permit: I certify that I personally will do all of the work involved in the installation of the above and that I am the present owner and resident of the property where the installation will be made.

..... Home Owner Applicant

Alvi Garfield
..... Applicant or his Representative

Bldg. Permit No. 16852

COUNTY OF NAPA, CALIFORNIA

APPLICATION FOR ELECTRICAL PERMIT

№ 12733

OWNER Freemark Abbey Winery DATE June 21 19 73

JOB ADDRESS 3020 St Helena Hwy CLASS OF BLDG. Winery 16 73

HOME ADDRESS ..... PARCEL No. 22-130-[illegible]

If Home Owners Permit, Statement Below Must Be Signed

ELECTRICAL CONTRACTOR Contra Costa Elect Inc, ADDRESS .....

Bldg 51-Grant St-Industrial Park, Benicia, 94510

The above named person hereby applies for an Electrical Permit to do electrical work in:

Single Family – Sq. Footage ..... Multi Family – No. of Units ..... Commercial $28,147 (1% of Contract)

Outlets Receptacles Fixtures Switches

Range Dryer Dishwasher Disposal Wtr. Htrs. Heaters

Temp. Power Pole Service Change: No. of Meters

Signs

Misc.: .....

ISSUE FEE: 2.00

PERMIT: 281.00

TOTAL: 283.00

I hereby certify and agree, if a permit is issued, that all the provisions of the Building and Electrical Codes and the Zoning Ordinance, Fire Ordinance, and Set-Back line requirements of the County of Napa, together with the California State Housing Act, will be complied with whether herein specified or not; And I hereby agree to save, indemnity and keep harmless the County of Napa against all liabilities, judgments, cost and expenses which may in any way accrue against said County in consequences of the granting of this permit, or from the use of occupancy of any sidewalk, street or sub-sidewalk placed by virtue thereof, and will in all things strictly comply with the conditions of my permit.

If applying for a Home Owners Permit: I certify that I personally will do all of the work involved in the installation of the above and that I am the present owner and resident of the property where the installation will be made.

Thomas R. Jacobsen

Home Owner Applicant

Applicant ~~or his~~ Representative

022-130-023
U-278081 / APP

CONSERVATION, DEVELOPMENT AND PLANNING COMMISSION
1121 First Street ▫ Napa, California 94558 ▫ [707] 253-4416

APPLICATION FOR LAND USE PERMIT

FOR OFFICE USE ONLY

ZONING DISTRICT PD

File No.: U-278081

REQUEST: To construct an 8,820 square foot building for additional barrel storage and winery office space at the Freemark Abbey winery on a 6.83 acre parcel located northeast of the State Highway 29 - Lodi Lane intersection within a PD Zoning District (APN's 22-130-15 & 16)

Date Filed: December 11, 1980

Date Published: 7 March 1981

CDPC BS

Hearing 18 March 1981

Action APPROVED

TO BE COMPLETED BY APPLICANT

Applicant's Name: FREEMARK ABBEY WINERY

Telephone No.: 707 963 9694

Address: PO BOX 410 ST. HELENA CA. 94574
NO. · STREET CITY STATE

Assessor's No.:

Zip Code: 94574

Status of Applicant's Interest in Property: OWNER

Property Owner's Name: FREEMARK ABBEY WINERY

Address: SAME
NO. STREET CITY STATE

Telephone No.: SAME

Reason for Use Permit request: FOR ADDITIONAL BARREL STORAGE SPACE & ADDITIONAL OFFICE SPACE.

I certify that the above statements are correct and that the Plot Plan on reverse side is accurate:

Freemark Abbey Winery
by William P Jaeger

SIGNATURE OF APPLICANT

Freemark Abbey Winery
by William P Jaeger

SIGNATURE OF PROPERTY OWNER

Submit with a check or money order in the amount of ~~eighty five ($85.00) dollars,~~ payable to the County of Napa, no part of which shall be refundable, to the Conservation, Development and Planning Department Office (the application fee consists of ~~$50.00~~ for the Use Permit and ~~$35.00~~ for an Environmental Impact Assessment of the request).

TO BE COMPLETED BY CONSERVATION, DEVELOPMENT & PLANNING DEPARTMENT

$450.00 37668 Received by: Barbara Sbate
RECEIPT NUMBER CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT

(over)

CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT
SUPPLEMENTAL INFORMATION SHEET
USE PERMIT APPLICATION

1. DESCRIPTION OF PROPOSED USE:

USE: BARREL STORAGE + WINERY OFFICE AREA +

PRODUCT OR SERVICE PROVIDED: _____

FLOOR AREA: EXISTING STRUCTURES 46,538 GROSS SQ. FT. NEW CONSTRUCTION 8,820 GROSS SQ. FT.

2. NEW CONSTRUCTION:

TYPE OF CONSTRUCTION: MASONRY + WOOD FRAME.

FENCING: TYPE NONE. LOCATION — HEIGHT —

MAX. HEIGHT (FT.): EXISTING STRUCTURES 22'± @ PK. PROPOSED STRUCTURES 24'± @ PK. OR ABOVE GRD.

3. AVERAGE OPERATION: (REFERS TO BARREL STORAGE ONLY SEE REVERSE SIDE)

HOURS OF OPERATION 7:00 A.M. TO 5:30 P.M. DAYS OF OPERATION 6/WK.

NUMBER OF SHIFTS: 1½ / 8 HRS. EMPLOYEES PER SHIFT: FULL TIME _____ PART TIME _____

NUMBER OF DELIVERIES OR PICK-UPS: 3/mo. @ CELLAR → ~~PER DAY~~

NUMBER OF VISITORS ANTICIPATED: NONE @ CELLAR → PER DAY — PER WEEK

ARE THERE SPECIAL OPERATIONS? PLEASE DESCRIBE ON ATTACHED PAGE SEE REVERSE SIDE —.

4. LANDSCAPING AND PARKING:

EXISTING LANDSCAPING: BANK PLANTING @ WEST END OF PROPOSED BUILDING ...

PROPOSED LANDSCAPING: AT SOUTH AND EAST SIDES OF PROPOSED BUILDING AND AT PROPOSED PARKING AREA.

PARKING SPACES: EXISTING SPACES 110+ EMPLOYEE 12+ CUSTOMER 98.+
PROPOSED SPACES ~~19+~~ 24 EMPLOYEE 10 CUSTOMER ~~19~~ 14 MKG

5. UTILITIES:

WATER SUPPLY SOURCE CITY OF ST. HELENA W/ 300,000 GAL. ON-SITE STORAGE METHOD OF SEWAGE DISPOSAL: ON-SITE DISPOSAL.

6. LICENSES OR APPROVALS REQUIRED:

NAPA COUNTY - USE PERMIT + BUILDING PERMIT.

DISTRICT _____ REGIONAL _____
STATE _____ FEDERAL _____

7. WINERY OPERATION:

EXISTG CRUSHING EXISTG FERMENTATION EXISTG STORAGE/AGING EXISTG BOTTLING/PACKING
EXISTG SHIPPING: VIA RAIL: TRUCK ADMINISTRATIVE: EXISTG TOURS/PUBLIC TASTING
OTHER: ALL OF ABOVE FUNCTIONS EXIST + ADDITIONAL BARREL STORAGE (600 BBLS) PROPOSED.

GALLONS OF WINE TO BE PRODUCED: _____ INITIAL OR CURRENT PRODUCTION _____ GALLONS/YEAR
_____ ULTIMATE PRODUCTION _____ GALLONS/YEAR
_____ REQUESTED PRODUCTION

6/10/77 — CURRENT PRODUCTION = 60,000 GALS...
— NO ADDITIONAL PRODUCTION ANTICIPATED...

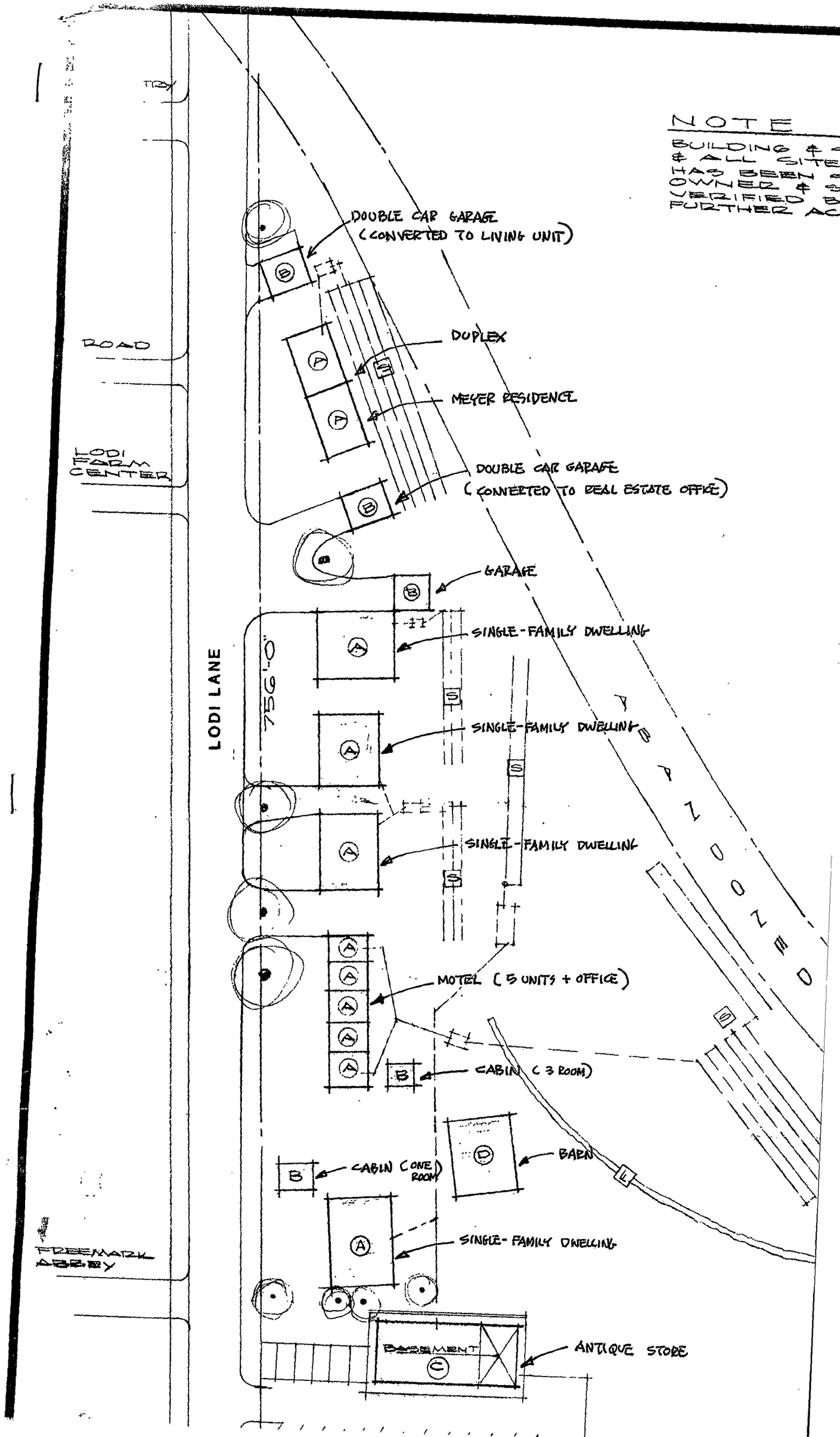
1ST AND 2ND FLOORS OFFICE AREAS.

- ESTIM. HOURS OF OPERATION:
  7:30 A.M. - 6:00 P.M.
- ESTIM. DAYS OF OPERATION:
  6 DAYS / WEEK.
- ESTIM. DELIVERIES OR PICK-UPS:
  20 / MONTH.
- ESTIM. NUMBER OF SHIFTS:
  1 / 8 HOUR DAY.
- ESTIM. NUMBER OF VISITORS ANTICIPATED:
  20-30 / 6 DAY WEEK.

Planning

Cover Sheet

APN	022-220-028-000
Permit #	91-2
Program	CLN
DocType	PLNS
Street #	1183
Street Name	Lodi Lane
Year	


NOTE
BUILDING &
& ALL SITE
HAS BEEN
OWNER &
VERIFIED
FURTHER A
TRY
ROAD
LODI FARM CENTER
LODI LANE
75'-0"
DOUBLE CAR GARAGE (CONVERTED TO LIVING UNIT)
DUPLEX
MEYER RESIDENCE
DOUBLE CAR GARAGE (CONVERTED TO REAL ESTATE OFFICE)
GARAGE
SINGLE-FAMILY DWELLING
SINGLE-FAMILY DWELLING
SINGLE-FAMILY DWELLING
MOTEL (5 UNITS + OFFICE)
CABIN (3 ROOM)
BARN
CABIN (ONE ROOM)
SINGLE-FAMILY DWELLING
BASEMENT
ANTIQUE STORE
ABANDONED
FREEMARK ABBEY

Appendix C

User-Provided Documentation

Environmental Risk Assessors

Phase I Environmental Site Assessment Questionnaire

Date: November 5, 2021
Site Name: Freemark Abbey Your Name: Geoff Scott
Site Location: St. Helena, California Your Title: VP, Real Estate

Relationship to Site: ☐ Owner ☐ Occupant ☐ Purchaser ☑ Other

Length of Time Associated with Site: 10 years

Please review and complete this questionnaire which will assist ERA in completing our site assessment. If sufficient space in not provided, please compete your response on a separate sheet of paper and attach it to this questionnaire.

1. Do you have a title document prepared for the Site? ☑ Yes ☐ No
   If yes, please provide a copy to ERA.

   ERA requested a copy of the title report from Mr. Scott who noted that a title report was not available.

2. Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?
   ☐ Yes ☑ No ☐ Unknown ☐ N/A
   If Yes, please explain: _____

3. Are you aware of any activity or land use limitations, such as engineering controls (for contaminant control), land use restrictions or institutional controls, that are in place at the Site and/or have been filed or recorded in a registry under federal, tribal, state or local law?
   ☐ Yes ☑ No ☐ Unknown ☐ N/A
   If Yes, please explain: _____

5098 Foothills Boulevard
Suite 3-146
Roseville, California 95747

Tel 916-677-9897
litafreeman@gmail.com

4. Do you have any specialized knowledge or experience related to the Site or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the Site or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

☐ Yes ☑ No ☐ Unknown ☐ N/A

If Yes, please explain: _____

_____

5. Are you aware of commonly known or reasonably ascertainable information about the Site that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

a) Do you know the past uses of the Site?

☑ Yes ☐ No ☐ Unknown ☐ N/A

If Yes, please explain: Winery, restaurant, motel, tasting room, residence, office vineyards, art gallery

b) Do you know of specific chemicals that are present or once were present at the Site?

☐ Yes ☐ No ☑ Unknown ☐ N/A

If Yes, please explain: _____

_____

c) Do you know of chemical spills that have taken place at the Site?

☐ Yes ☐ No ☑ Unknown ☐ N/A

If Yes, please explain: _____

_____

d) Do you know of any environmental cleanups that have taken place at the Site?

☐ Yes ☐ No ☑ Unknown ☐ N/A

If Yes, please explain: _____

_____

e) Do you know if any fill material has been imported to the Site?

☐ Yes ☐ No ☑ Unknown ☐ N/A

If Yes, please explain: _____

_____

6. Do you know of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Site?

☐ Yes ☑ No ☐ Unknown ☐ N/A

If Yes, please explain:_____

_____

7. Do you know of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the Site?

☐ Yes ☑ No ☐ Unknown ☐ N/A

If Yes, please explain:_____

_____

8. Do you know of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products at the Site?

☐ Yes ☑ No ☐ Unknown ☐ N/A

If Yes, please explain:_____

_____

9. Based on your knowledge and experience related to the Site are there any obvious indicators that point to the presence or likely presence of contamination at the Site?

☐ Yes ☑ No ☐ Unknown ☐ N/A

If Yes, please explain:_____

_____

10. Does the Site's purchase price reasonably reflect the fair market value of the property?

☐ Yes ☐ No ☐ Unknown ☑ N/A

If No, do you know the reason for lower purchase price? Is it possible that the lower purchase price is because of contamination known or believed to be present at the Site?

☐ Yes ☐ No ☐ Unknown ☑ N/A

If Yes, please explain:_____

_____

11. Have any of the following documents been prepared for the Site and, if so, can copies be provided to ERA:

- Environmental site assessment reports ☑ Yes ☐ No ☑ Copies available
- Environmental compliance audit reports ☐ Yes ☑ No ☐ Copies available
- Environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, National Pollutant Discharge Elimination System permits, underground injection permits) ☐ Yes ☐ No ☐ Copies available
- Registrations for underground storage tanks (USTs) and/or above ground storage tanks (ASTs) ☐ Yes ☐ No ☐ Copies available
- Registrations for underground injection systems ☐ Yes ☑ No ☐ Copies available
- Material safety data sheets ☐ Yes ☑ No ☐ Copies available
- Community right-to-know plan ☐ Yes ☑ No ☐ Copies available
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc. ☐ Yes ☑ No ☐ Copies available
- Reports regarding hydrogeologic conditions on the Site or in the surrounding area
  ☐ Yes ☐ No ☑ Copies available
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the Site or relating to environmental liens encumbering the Site ☐ Yes ☑ No ☐ Copies available
- Hazardous waste generator notices or reports ☐ Yes ☑ No ☐ Copies available
- Risk assessments ☐ Yes ☑ No ☐ Copies available
- Recorded Activity and Use Limitations (e.g. deed restriction, asphalt cap)
  ☐ Yes ☑ No ☐ Copies available

ERA appreciates your assistance on this project.

Appendix D

Historical Research Documentation

Freemark Abbey Winery - Alumbaugh Property

3000-3022 Saint Helena Hwy N

Saint Helena, CA 94574

Inquiry Number: 6753600.3

November 17, 2021

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/17/21

Site Name:

Freemark Abbey Winery - Alum
3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
EDR Inquiry # 6753600.3

Client Name:

Environmental Risk Assessors
5098 Foothills Boulevard Suite 3-146
Roseville, CA 95747
Contact: Lita Freeman

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Environmental Risk Assessors were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # F63A-4143-9685

PO # 01-2021-900-004

Project St Helena Mixed Use

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: F63A-4143-9685

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Environmental Risk Assessors (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2021 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Freemark Abbey Winery - Alumbaugh Property

3000-3022 Saint Helena Hwy N

Saint Helena, CA 94574

Inquiry Number: 6753600.8

November 17, 2021

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

11/17/21

Site Name:

Freemark Abbey Winery - Alum
3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
EDR Inquiry # 6753600.8

Client Name:

Environmental Risk Assessors
5098 Foothills Boulevard Suite 3-146
Roseville, CA 95747
Contact: Lita Freeman

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1993	1"=500'	Acquisition Date: July 10, 1993	USGS/DOQQ
1982	1"=500'	Flight Date: July 08, 1982	USDA
1973	1"=500'	Flight Date: September 27, 1973	USGS
1970	1"=500'	Flight Date: April 19, 1970	USGS
1968	1"=500'	Flight Date: April 18, 1968	USGS
1958	1"=500'	Flight Date: October 02, 1958	USDA
1952	1"=500'	Flight Date: June 08, 1952	USGS
1947	1"=500'	Flight Date: March 01, 1947	USGS

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2021 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

INQUIRY #: 6753600.8
YEAR: 2016
= 500'
N
EDR

INQUIRY #: 6753600.8
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 6753600.8
YEAR: 2009
= 500'
N
EDR

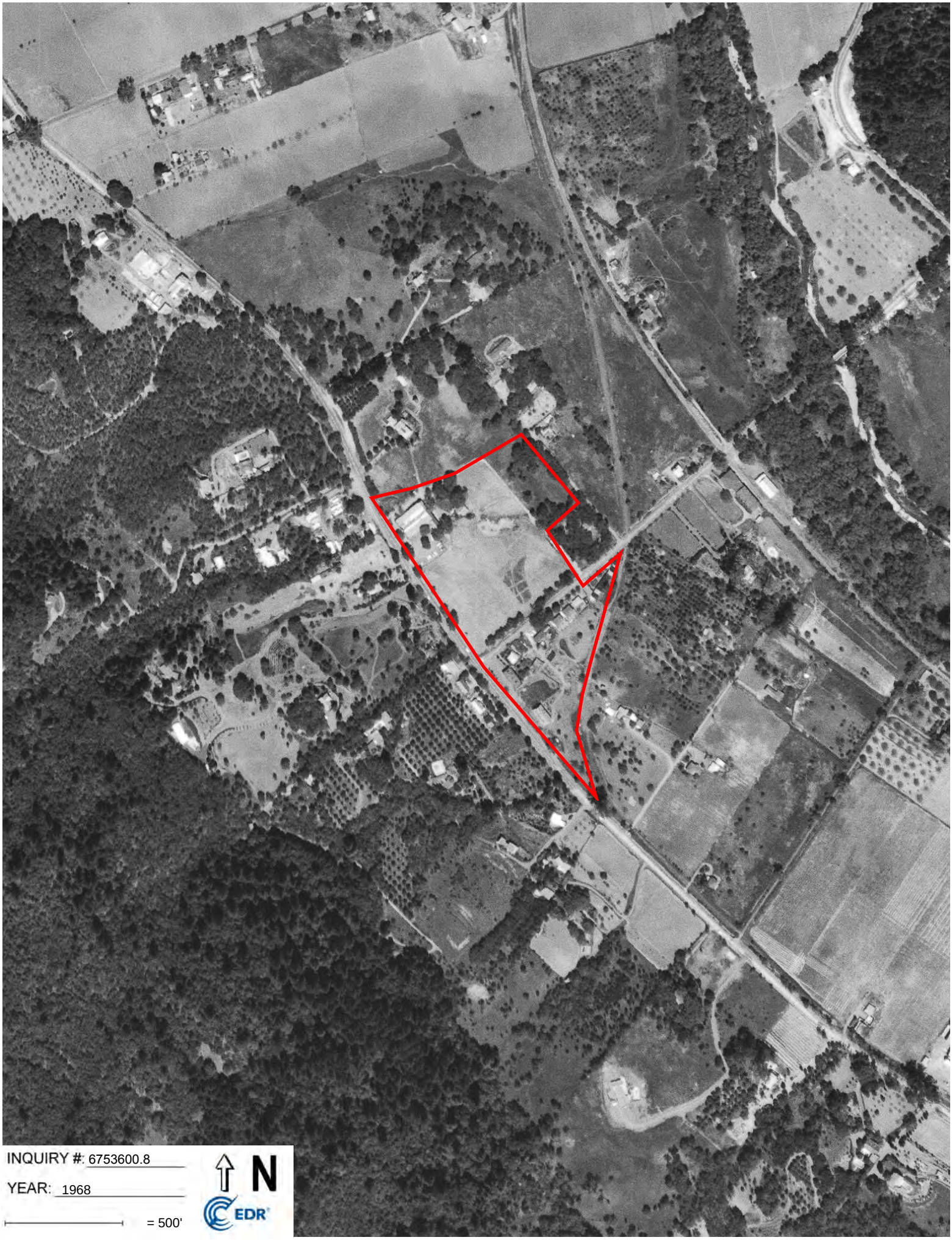
INQUIRY #: 6753600.8
YEAR: 2006
= 500'
N
EDR

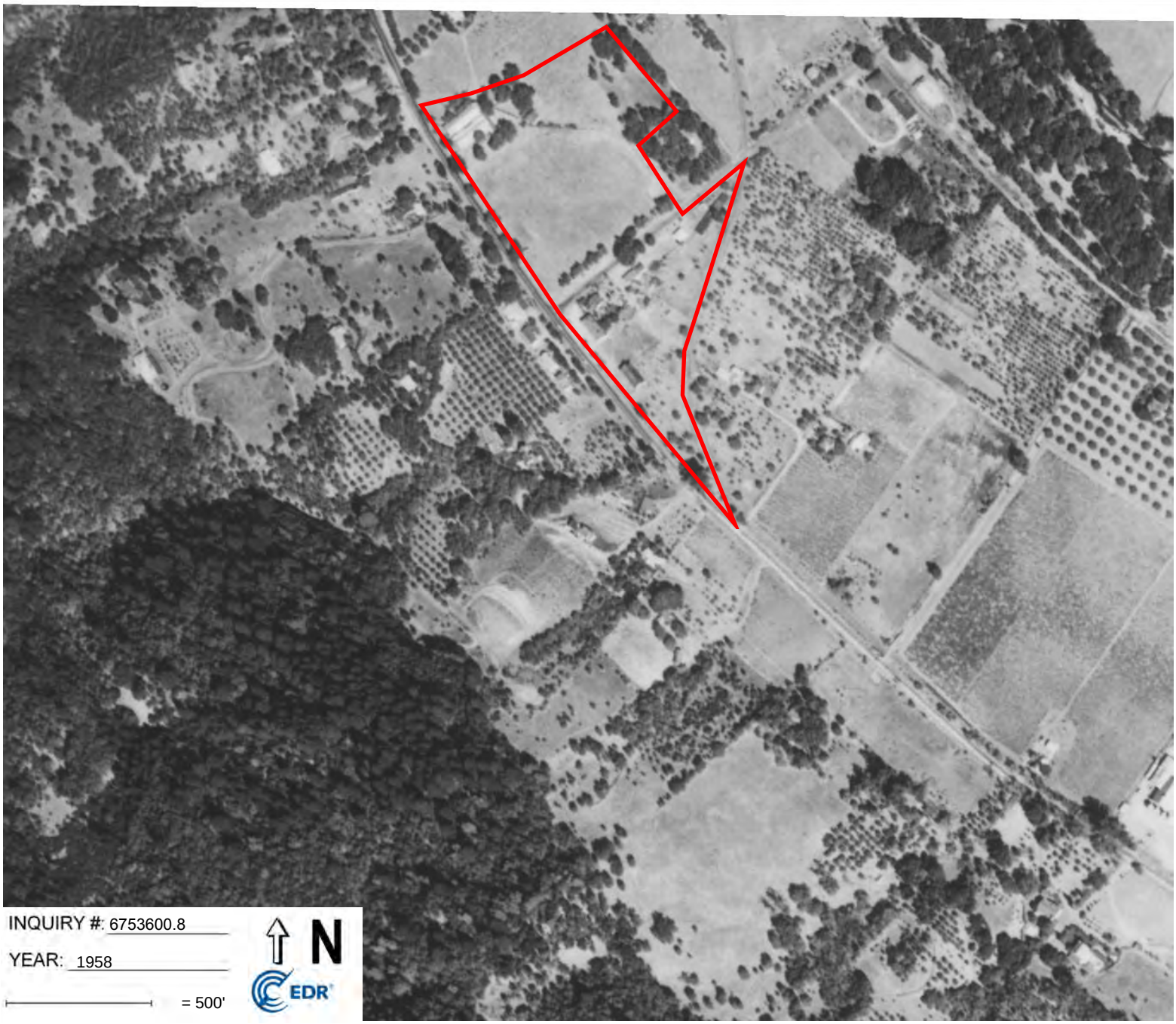
INQUIRY #: 6753600.8
YEAR: 1993
= 500'
N
EDR

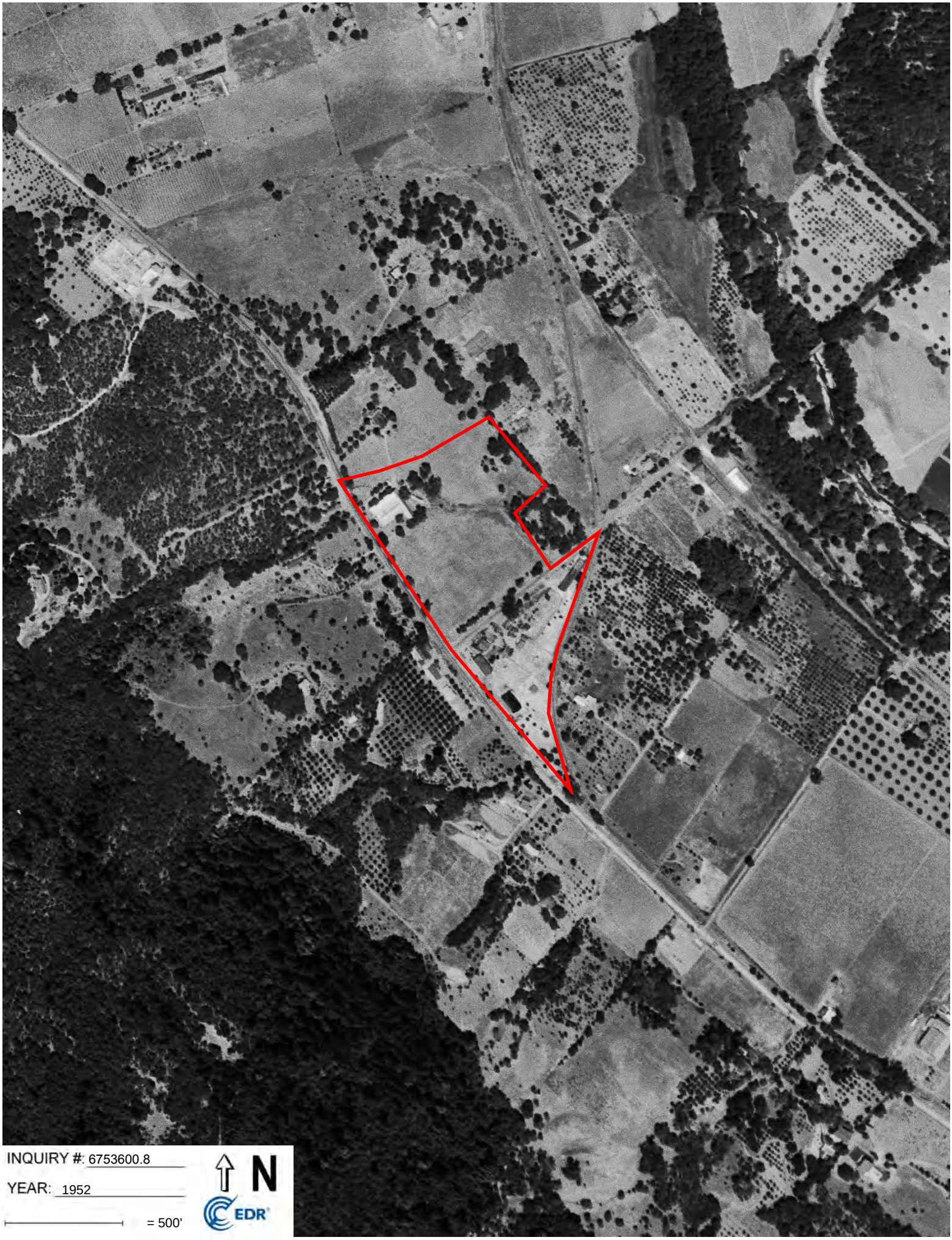
INQUIRY #: 6753600.8
YEAR: 1982
= 500'
N
EDR

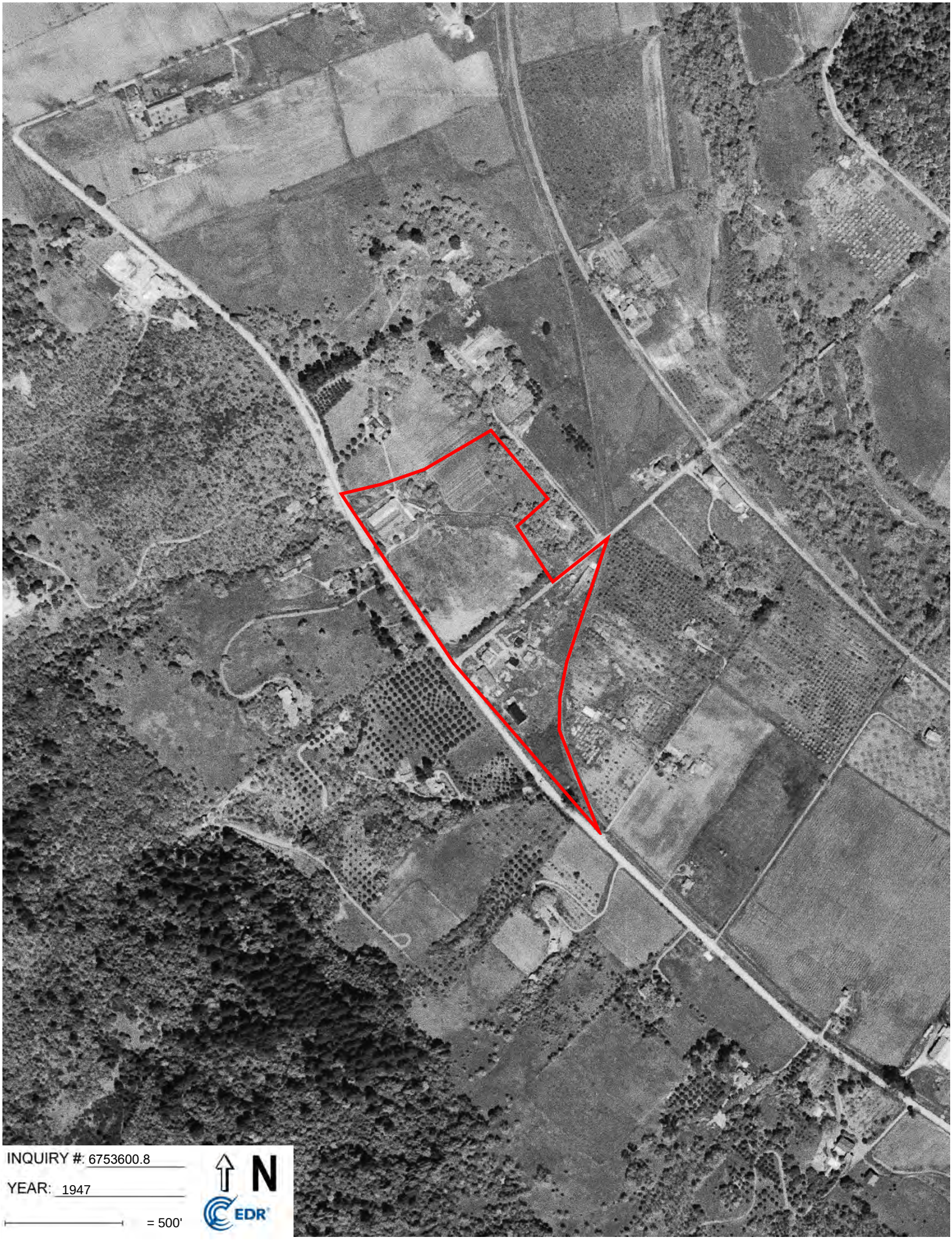
INQUIRY #: 6753600.8
YEAR: 1973
= 500'
N
EDR

INQUIRY #: 6753600.8
YEAR: 1970
= 500'
N
EDR


INQUIRY #: 6753600.8
YEAR: 1968
= 500'
N
EDR


INQUIRY #: 6753600.8
YEAR: 1958
= 500'
N
EDR


INQUIRY #: 6753600.8
YEAR: 1952
= 500'
N
EDR


INQUIRY #: 6753600.8
YEAR: 1947
= 500'
N
EDR

Freemark Abbey Winery - Alumbaugh Property

3000-3022 Saint Helena Hwy N

Saint Helena, CA 94574

Inquiry Number: 6753600.4

November 17, 2021

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

11/17/21

Site Name:

Freemark Abbey Winery - Alum
3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
EDR Inquiry # 6753600.4

Client Name:

Environmental Risk Assessors
5098 Foothills Boulevard Suite 3-146
Roseville, CA 95747
Contact: Lita Freeman

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Environmental Risk Assessors were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 01-2021-900-004
Project: St Helena Mixed Use

Coordinates:

Latitude:	38.524794 38° 31' 29" North
Longitude:	-122.496369 -122° 29' 47" West
UTM Zone:	Zone 10 North
UTM X Meters:	543900.62
UTM Y Meters:	4264164.79
Elevation:	284.57' above sea level

Maps Provided:

2012
1997
1993
1980
1959, 1960
1958, 1960
1945
1942, 1943

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2021 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Saint Helena
2012
7.5-minute, 24000

Calistoga
2012
7.5-minute, 24000

1997 Source Sheets

Calistoga
1997
7.5-minute, 24000

1993 Source Sheets

St. Helena
1993
7.5-minute, 24000
Aerial Photo Revised 1987

Calistoga
1993
7.5-minute, 24000
Aerial Photo Revised 1987

1980 Source Sheets

Calistoga
1980
7.5-minute, 24000
Aerial Photo Revised 1978

St. Helena
1980
7.5-minute, 24000
Aerial Photo Revised 1978

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1959, 1960 Source Sheets

Calistoga
1959
15-minute, 62500
Aerial Photo Revised 1957

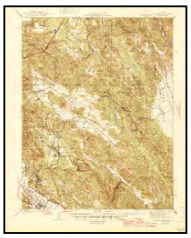
St. Helena
1960
15-minute, 62500
Aerial Photo Revised 1957

1958, 1960 Source Sheets

Calistoga
1958
7.5-minute, 24000
Aerial Photo Revised 1957

1945 Source Sheets

Calistoga
1945
15-minute, 62500



St. Helena
1945
15-minute, 62500

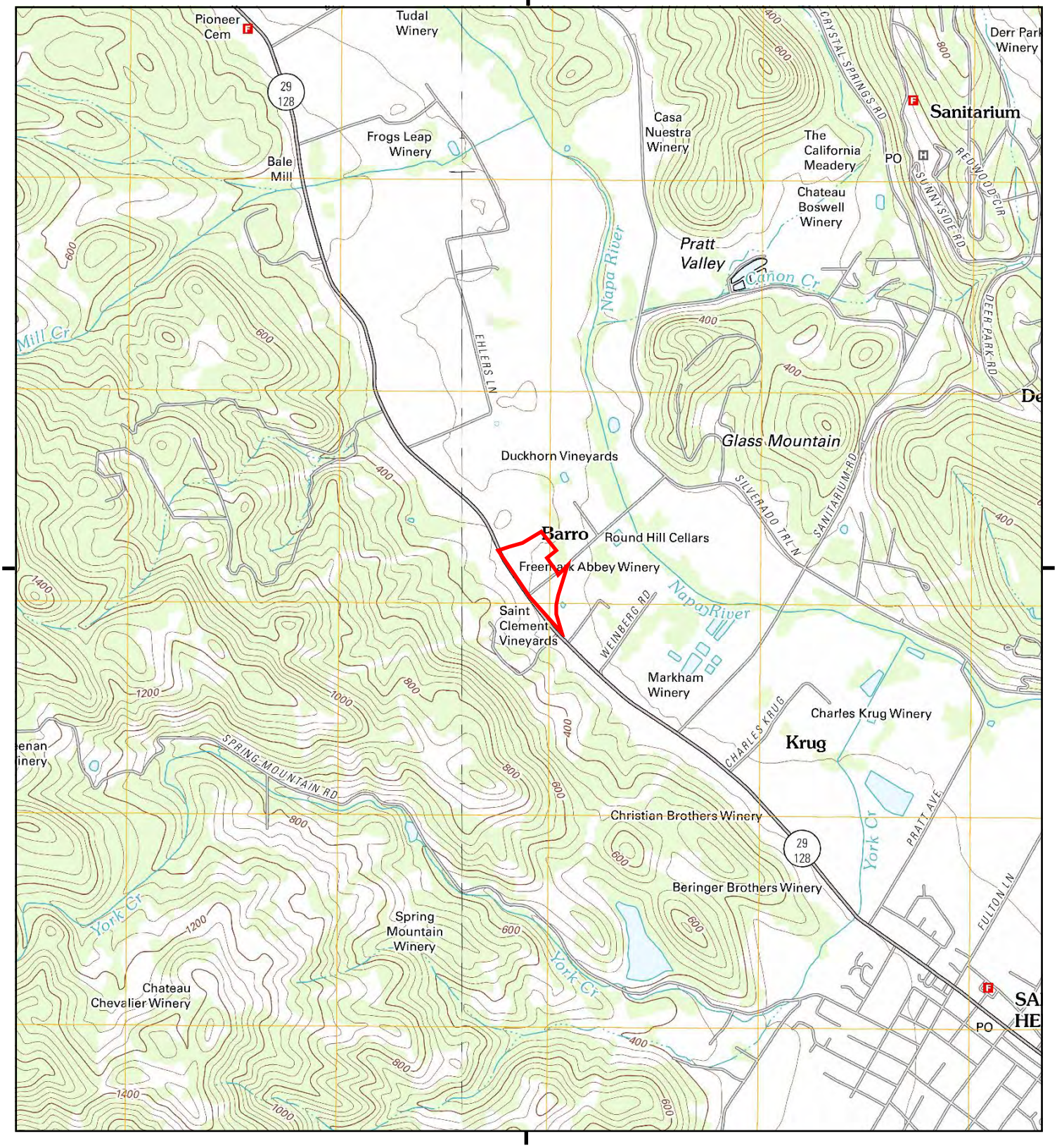
1942, 1943 Source Sheets

St. Helena
1942
15-minute, 62500

Calistoga
1943
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

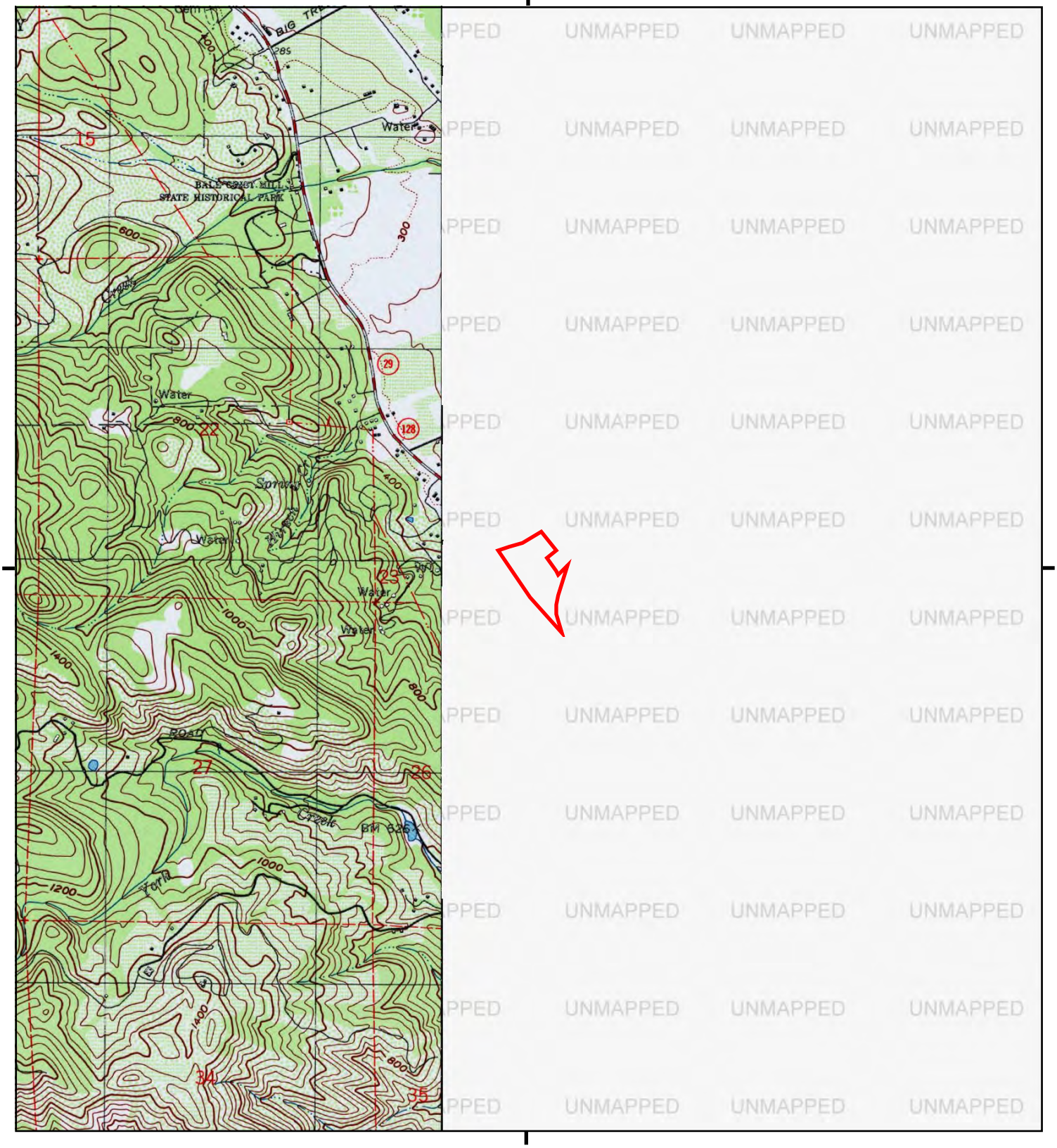
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Saint Helena, 2012, 7.5-minute
NW, Calistoga, 2012, 7.5-minute

SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N



This report includes information from the following map sheet(s).

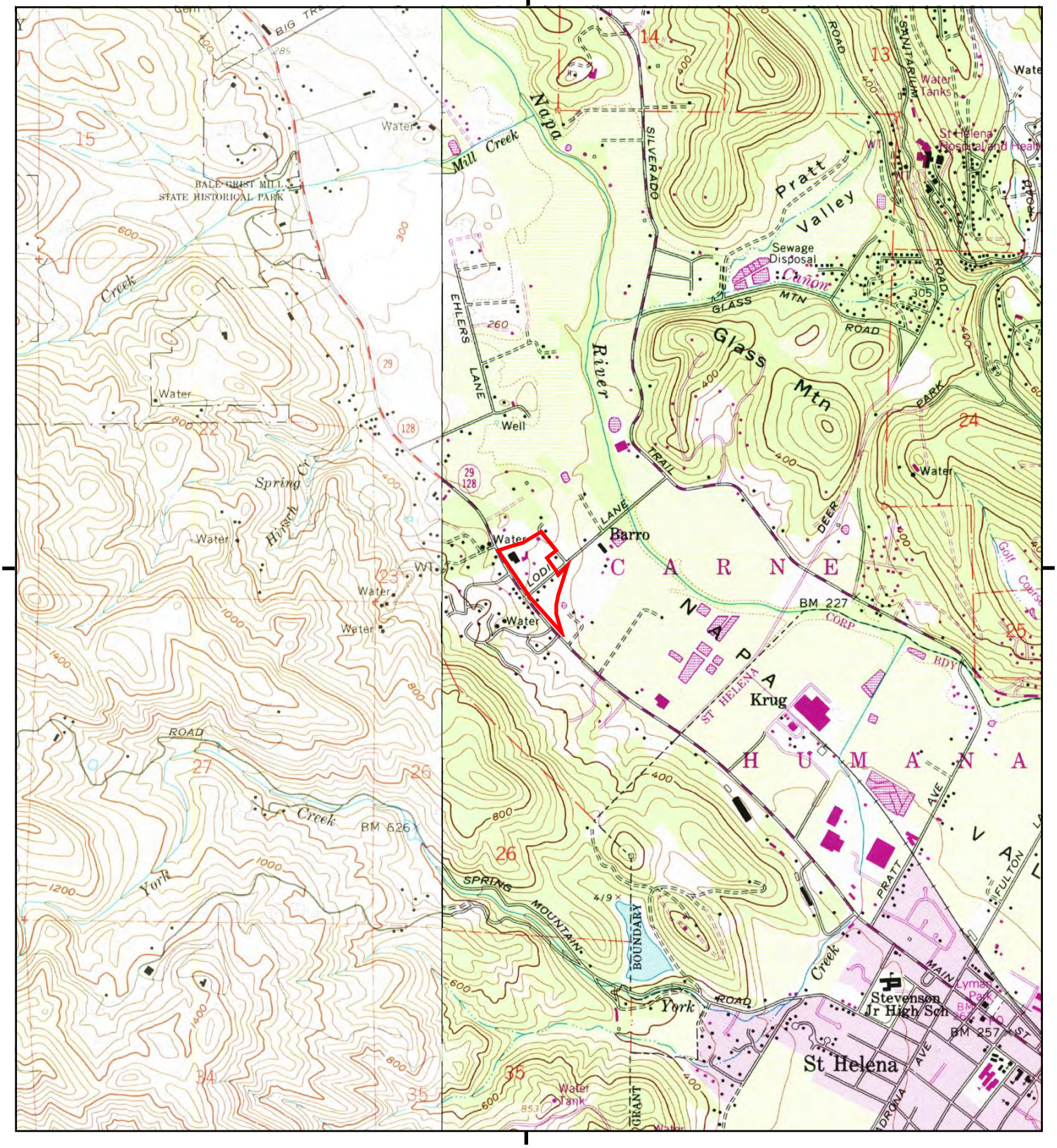
0 Miles 0.25 0.5 1 1.5

NW, Calistoga, 1997, 7.5-minute

NW N NE
W E
SW S SE

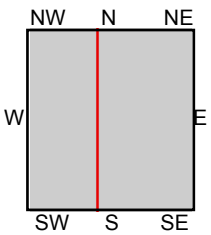
SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



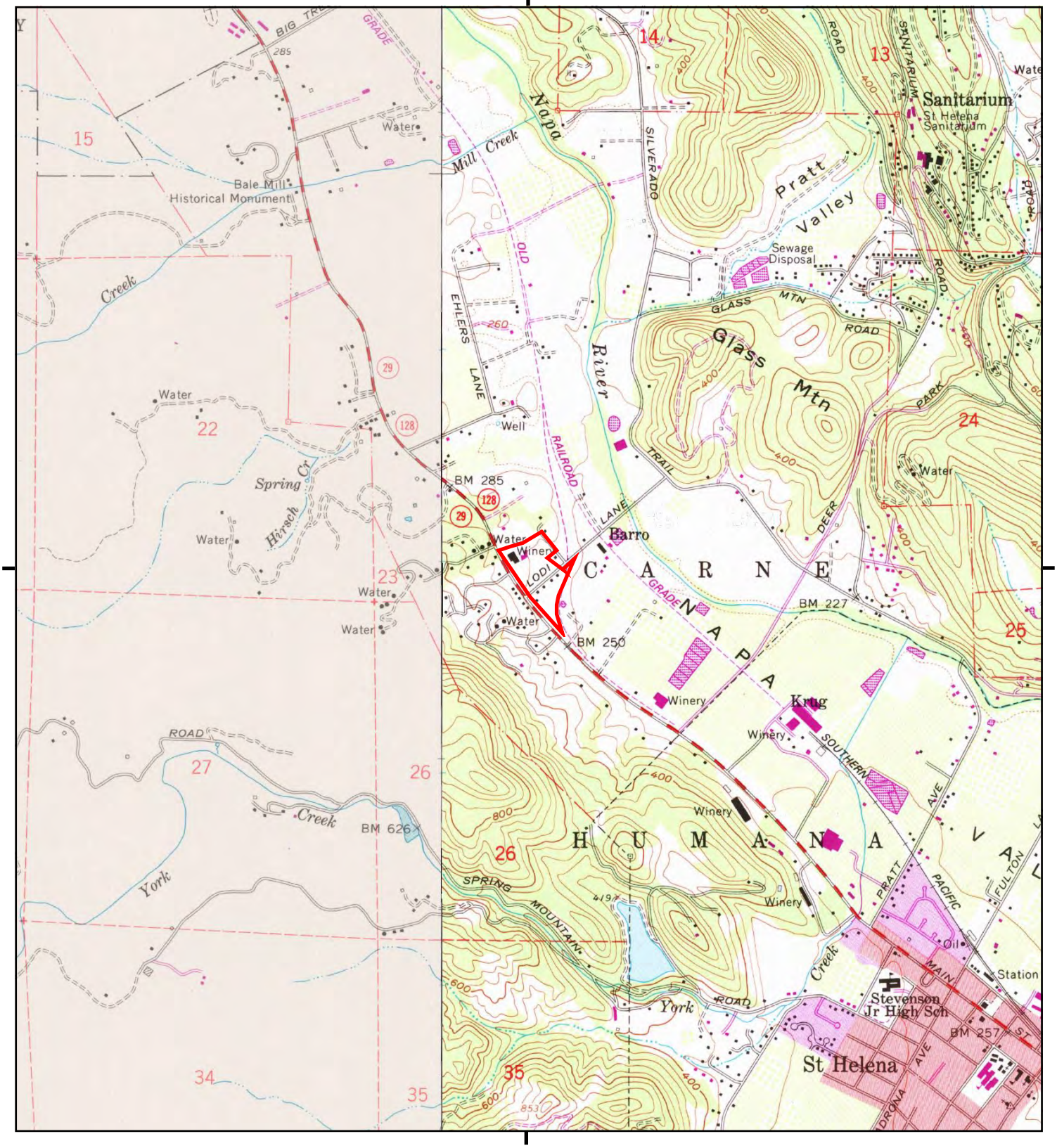
TP, St. Helena, 1993, 7.5-minute
NW, Calistoga, 1993, 7.5-minute

SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N

Historical Topo Map

1980



This report includes information from the following map sheet(s).

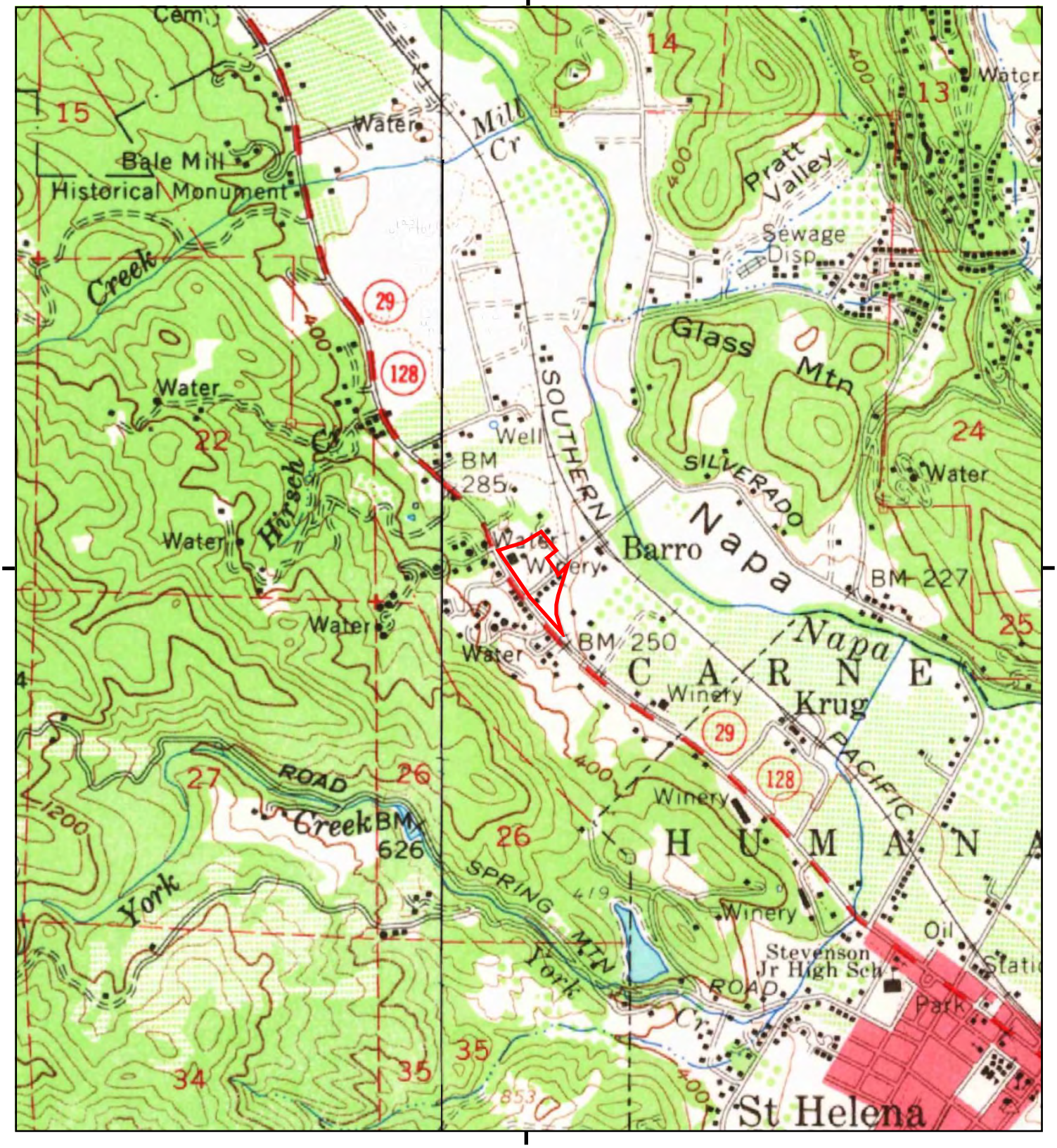
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, St. Helena, 1980, 7.5-minute
NW, Calistoga, 1980, 7.5-minute

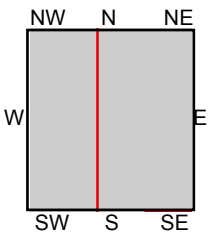
SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



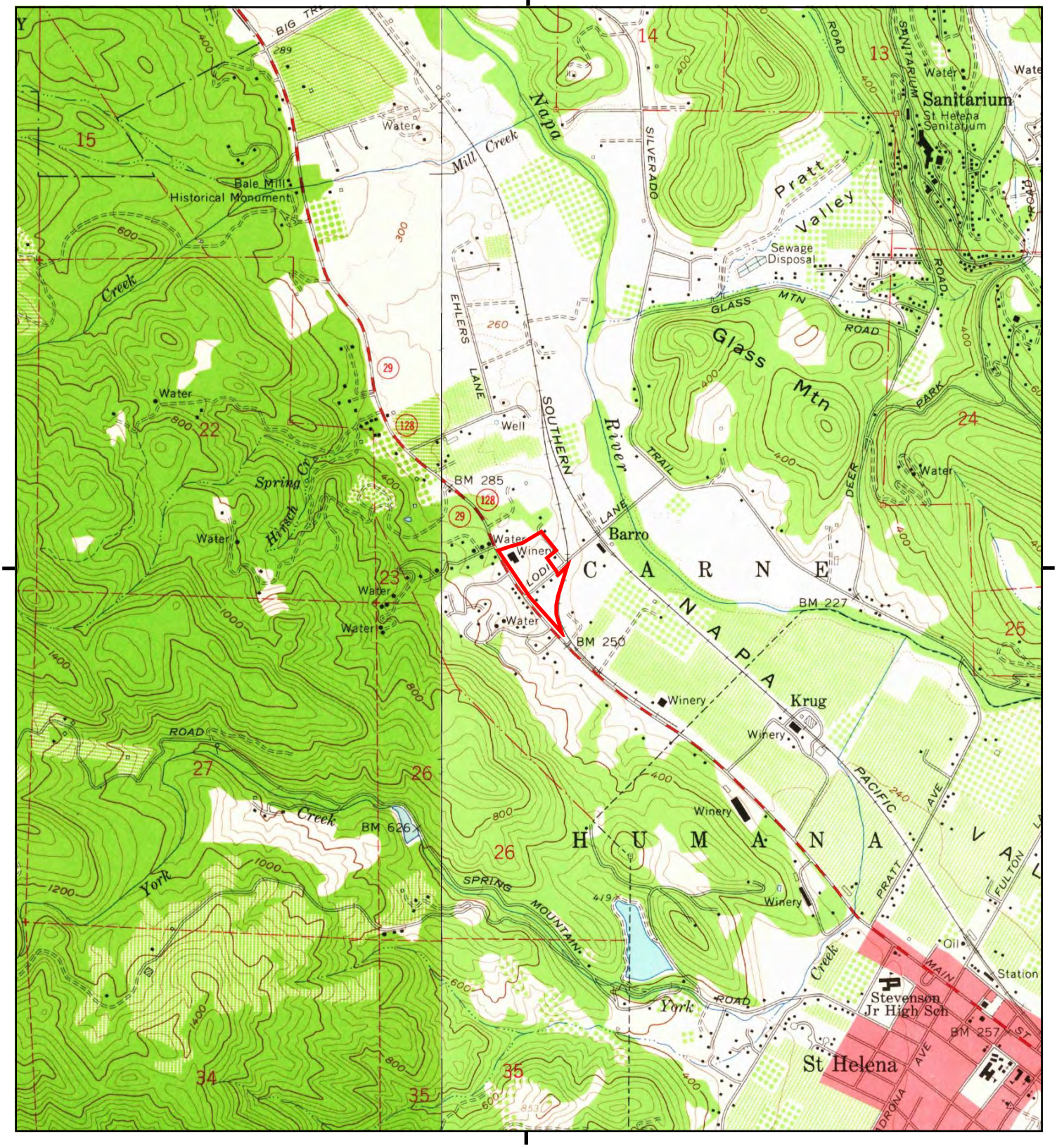
TP, St. Helena, 1960, 15-minute
NW, Calistoga, 1959, 15-minute

SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N

Historical Topo Map

1958, 1960



This report includes information from the following map sheet(s).

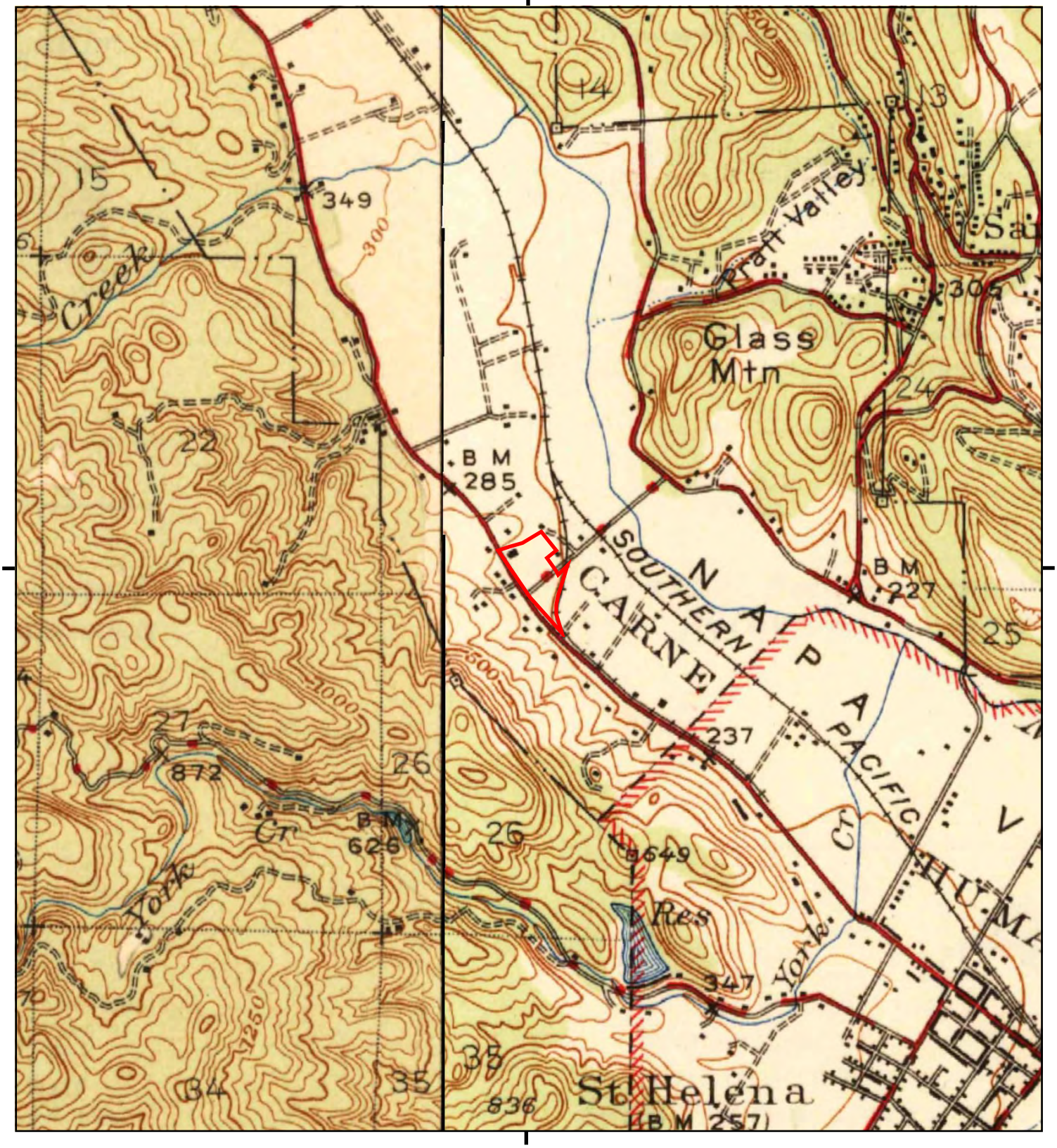
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, St. Helena, 1960, 7.5-minute
NW, Calistoga, 1958, 7.5-minute

SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N



This report includes information from the following map sheet(s).

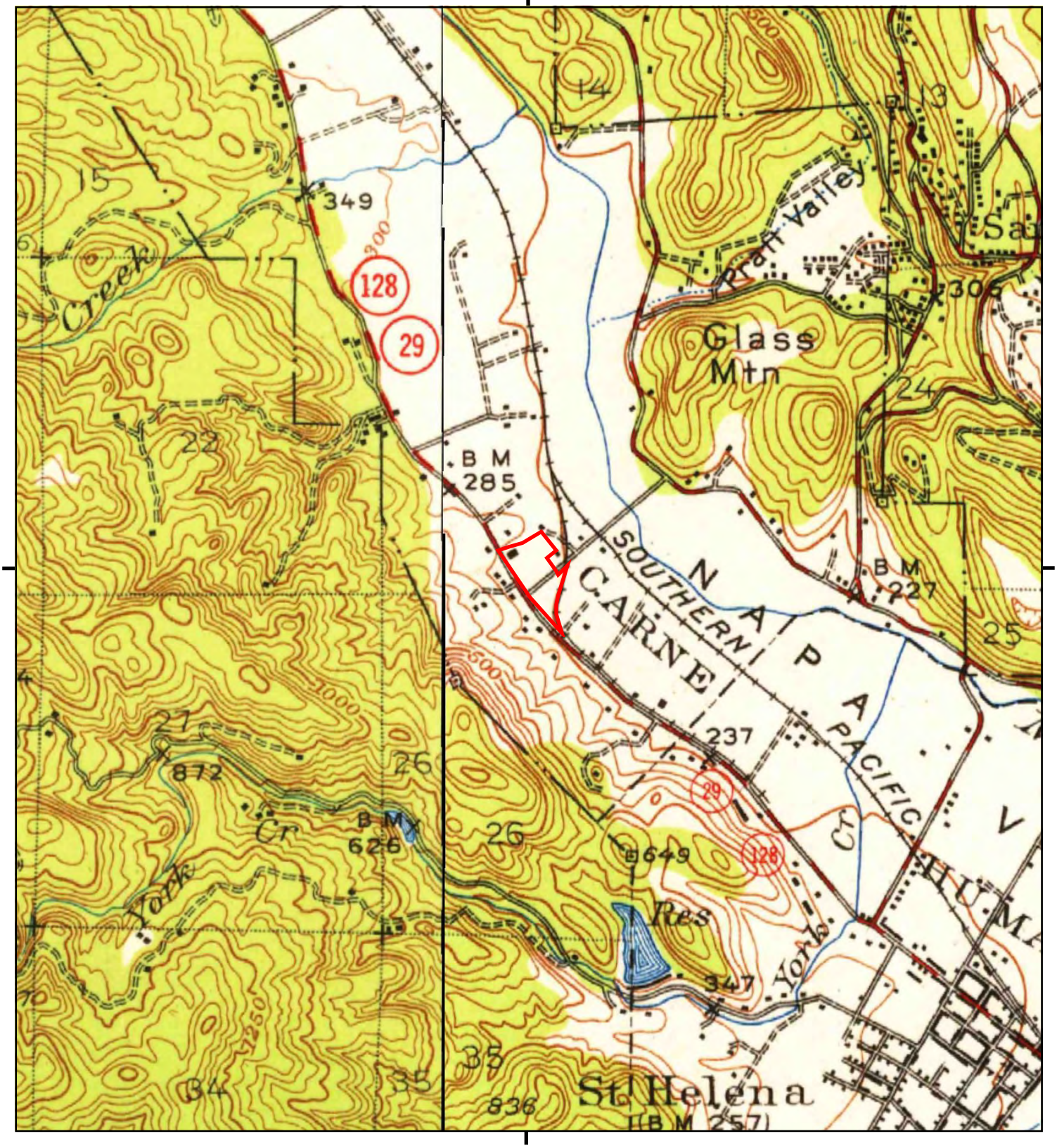
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, St. Helena, 1945, 15-minute
NW, Calistoga, 1945, 15-minute

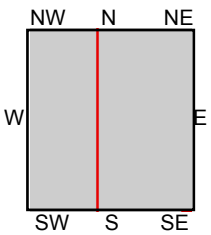
SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, St. Helena, 1942, 15-minute
NW, Calistoga, 1943, 15-minute

SITE NAME: Freemark Abbey Winery - Alumbaugh Prc
ADDRESS: 3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574
CLIENT: Environmental Risk Assessors

N

Freemark Abbey Winery - Alumbaugh Property
3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574

Inquiry Number: 6753600.5
November 23, 2021

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

Data by
infoUSA®
Copyright©2008
All Rights Reserved

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1986	☑	☑	Haines Criss-Cross Directory
1981	☑	☑	Haines Criss-Cross Directory
1977	☑	☑	Haines Criss-Cross Directory
1974	☑	☐	POLK DIRECTORY CO
1969	☑	☐	POLK DIRECTORY CO
1965	☑	☐	POLK DIRECTORY CO
1960	☐	☐	POLK DIRECTORY CO

EXECUTIVE SUMMARY

Year	*Target Street*	*Cross Street*	*Source*

FINDINGS

TARGET PROPERTY STREET

3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574

Year	*CD Image*	*Source*	
SAINT HELENA HWY N			
2017	pg A2	EDR Digital Archive	
2014	pg A5	EDR Digital Archive	
2010	pg A8	EDR Digital Archive	
2005	pg A11	EDR Digital Archive	
2000	pg A14	EDR Digital Archive	
1995	pg A17	EDR Digital Archive	
1992	pg A20	EDR Digital Archive	
1986	pg A23	Haines Criss-Cross Directory	
1986	pg A24	Haines Criss-Cross Directory	
1981	pg A27	Haines Criss-Cross Directory	
1977	pg A30	Haines Criss-Cross Directory	
1974	pg A32	POLK DIRECTORY CO	
1974	pg A33	POLK DIRECTORY CO	
1969	pg A34	POLK DIRECTORY CO	
1969	pg A35	POLK DIRECTORY CO	
1965	pg A36	POLK DIRECTORY CO	
1960	-	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
LODI LN			
2017	pg. A1	EDR Digital Archive	
2014	pg. A4	EDR Digital Archive	
2010	pg. A7	EDR Digital Archive	
2005	pg. A10	EDR Digital Archive	
2000	pg. A13	EDR Digital Archive	
1995	pg. A16	EDR Digital Archive	
1992	pg. A19	EDR Digital Archive	
1986	pg. A22	Haines Criss-Cross Directory	
1981	pg. A26	Haines Criss-Cross Directory	
1977	pg. A29	Haines Criss-Cross Directory	
1974	-	POLK DIRECTORY CO	Street not listed in Source
1969	-	POLK DIRECTORY CO	Street not listed in Source
1965	-	POLK DIRECTORY CO	Street not listed in Source
1960	-	POLK DIRECTORY CO	Street not listed in Source
YORK AVE			
2000	pg. A15	EDR Digital Archive	
1995	pg. A18	EDR Digital Archive	
1992	pg. A21	EDR Digital Archive	
1986	pg. A25	Haines Criss-Cross Directory	
1981	pg. A28	Haines Criss-Cross Directory	
1977	pg. A31	Haines Criss-Cross Directory	
1974	-	POLK DIRECTORY CO	Street not listed in Source
1969	-	POLK DIRECTORY CO	Street not listed in Source
1965	-	POLK DIRECTORY CO	Street not listed in Source
1960	-	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

Year	*CD Image*	*Source*
YORK LN		
2017	pg. A3	EDR Digital Archive
2014	pg. A6	EDR Digital Archive
2010	pg. A9	EDR Digital Archive
2005	pg. A12	EDR Digital Archive

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 2017

1000	DUCKHORN VINEYARDS
1098	GASTON, ANDREW T
1112	DAVIS, JEANNE L
1115	KEY, PAULA L
1152	THE WINE COUNTRY INN
	WINE COUNTRY INN LLC THE
1154	ARCANIN, KATHERINE P
1157	POTVIN, KIM J
1159	RAMIREZ, ALFREDO G
1165	KAHN, ANDY T
1179	DELATORRE, NORMA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 2017

2959	LOCKWOOD, JOHN
2963	KORNELL, PAULA L
2993	CARPENTER, LES
2995	CENDEJAS, JESUS A
2997	HAMILTON, MEGHAN
2999	RAMOS, DAVID G
3000	JACKSON FAMILY ENTERPRISES
3001	BORLAND, PRISCILLA B
3019	BERRY, FREDERICK F
	BUON VIAGGIO TRAVEL
3020	THE SILVERADO BREWING
3021	BISAGNO, ROY P
3023	NOBLEMAN, SYLVIA R
	OLIVO, THOMAS D
	PETERSON, NOELLE C
3043	DIAZ, ADAM
	HERNANDEZ, PATRICIA
	JACOB, CESARIO
	MARTINEZ, JOSE
	RIOS, GABRIEL
	ROJAS, CELESTINO
	SOLANO, LUIS A
	VAZQUEZ, FRANSWA
	VISTA DEL VALLE
3050	HORROCKS, ALSTON
3051	MORGAN, TOM J
3053	BASWELL, LAWRENCE R
3057	YOUNG, PAULA R
3070	TRINCHERO NAPA VALLEY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK LN 2017

1156 ALANTE CORP
1181 LEWIN, ROBERT K
1190 MOODENBAUGH, MATTHEW J

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 2014

1000	DUCKHORN VINEYARDS
	DUCKHORN WINE CO
	DUCKHORN, BELINDA
1085	FINGERMAN, WYANE A
1098	OLES, RUSSELL W
1099	BEEBE, MARK K
1101	OCCUPANT UNKNOWN,
1105	OCCUPANT UNKNOWN,
1115	OCCUPANT UNKNOWN,
1148	SANDS, KATE
1152	THE WINE COUNTRY INN
	WINE COUNTRY INN LLC THE
1154	ALEX WIGNALL
	WIGNALL, NICK
1157	DENNY, MATTHEW
1159	RAMIREZ, ALFREDO G
1165	KAHN, ANDY T
1179	DELATORRE, NORMA
1181	ORTIZ, CARLOS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 2014

2963	KORNELL, PAULA L
2993	CARPENTER, LES
2995	CENDEJAS, JESUS A
2997	HAMILTON, MEGHAN
2999	RAMOS, DAVID G
3001	FRIAS, MANUEL
3009	OCCUPANT UNKNOWN,
3019	BERRY, FREDERICK F
3020	THE SILVERADO BREWING
3021	BISAGNO, ROY P
3022	FREEMARK ABBEY WINERY
3023	GOETTING, TRESTER
	OLIVO, T
	PETERSON, NOELLE C
3029	OCCUPANT UNKNOWN,
3037	GALANTE, BARBARA
3043	CONTRERAS, JOSE L
	DIAZ, ADAM
	JACOB, CESARIO
	MARTINEZ, VICENTE
	ROJAS, CELESTINO
	SMITH, STUART B
	SOLANO, LUIS A
	VISTA DEL VALLE
3047	DEMENT, KAREN
3050	HORROCKS, ALSTON
3051	MORGAN, TOM J
3053	BASWELL, LAWRENCE R
3057	YOUNG, WILLIAM P
3059	OCCUPANT UNKNOWN,
3070	TRINCHERO NAPA VALLEY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK LN 2014

1156	ALANTE CORP
1181	LEWIN, ROBERT K
	OCCUPANT UNKNOWN,
1190	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 2010

1000	DUCKHORN VINEYARDS
	OCCUPANT UNKNOWN,
1085	GIAQUINTA, GERALD J
1098	GASTON, ANDREW T
	SUNRISE STABLES
1099	BEEBE, MARK K
1105	BERGGRUEN, GRETCHEN M
1115	JOHNSON, A
1148	SMITH, KATHRYN A
1152	WINE COUNTRY INN
1154	WIGNALL, DAVID C
1157	BROUSE, JOSH
1159	RAMIREZ, ALFREDO G
1165	OCCUPANT UNKNOWN,
1179	OCCUPANT UNKNOWN,
1181	ORTIZ, CARLOS
1189	EAGLE & THE ROSE INN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 2010

2959	HECKERT, RICHARD T
2963	KORNELL, PETER H
2993	OCCUPANT UNKNOWN,
2995	CENDEJAS, JESUS A
2999	BARRALL, AUDREY L
3000	A DOZEN VINTNERS
3001	OCCUPANT UNKNOWN,
3009	KLENKE, DAN
3019	OCCUPANT UNKNOWN,
3020	SILVERADO BREWING CO
3021	BISAGNO, ROY P
3023	OCCUPANT UNKNOWN,
	OLIVO, T
	PETERSON, NOELLE C
3029	OCCUPANT UNKNOWN,
3043	AYALA, BARBARA S
	DIAZ, ALAN
	HERNANDEZ, OSVALDO
	MATHEWSON, RAY V
	ROJAS, CELESTINO
	ROMERO, FERNANDO
	SALDIVAR, SERGIO
	SMITH, STUART B
	SOLANO, LUIS A
	VAZQUEZ, FRANSWA
	VISTA DEL VALLE
3047	LYNCH ENTERPRISES
3050	HORROCKS, ALSTON
3051	MORGAN, TOM J
3053	BASWELL, LAWRENCE R
3059	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK LN 2010

1156 ALANTE CORP
1181 JACKSON, CLARE
OCCUPANT UNKNOWN,
1190 ALUMBUGH, NORMAN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 2005

1000	DECOY
	DUCK HORN VINEYARDS
	DUCKHORN WINE CO
	KING EIDER
	OCCUPANT UNKNOWN,
1095	LEF FDN
1098	GASTON, ANDREW T
	LEE, RALPH E
	SUNRISE STABLES
	WHITE, DOLLY M
1105	OCCUPANT UNKNOWN,
1112	EXCELL, TIMOTHY B
1115	JOHNSON, A
1148	SMITH, MARGE K
1150	SANDS, KATHRYN S
1152	WINE COUNTRY INN
1154	WIGNALL, DAVID L
1157	KELLY, CHRISTOPHER R
1159	OCCUPANT UNKNOWN,
1165	OCCUPANT UNKNOWN,
1179	SANCHEZ, SALVADOR
1181	STEELMAN, DENISE R
1199	STEFFEN, MATT W

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 2005

2959	BARREL MERCHANTS & RED RIVER LUMBER
	HECKERT, RICHARD T
	RED RIVER LUMBER CO
2963	KORNELL, PAULA L
2993	ALBRIGHT, ALBERT A
2995	SIMMONS, BRIAN
2997	MARTINEZ, ERNESTO
2999	OCCUPANT UNKNOWN,
3000	ARTISAN WINE TASTING
	CAFE 29
	OCCUPANT UNKNOWN,
3001	GIOVANNONI, TERESA M
3009	OCCUPANT UNKNOWN,
3010	HALPERT, F D
3019	BERRY, FREDERICK F
3021	BISAGNO, ROY P
3022	FREEMARK ABBEY WINERY
	HIGHLANDS WINE CO
3023	OCCUPANT UNKNOWN,
	PETERSON, NOELLE F
3029	COLGIN, GRUTRUDE C
3043	AYALA, BARBARA S
	HERNANDEZ, OSVALDO
	NUNEZ, ADAM R
	PARKER, RUTH
	ROJAS, CELESTINO
	ROMERO, FERNANDO
	SALDIVAR, SERGIO
	SMITH, STUART B
	VISTA DEL VALLE
3047	OCCUPANT UNKNOWN,
3050	HORROCKS, ALSTON
3051	MORGAN, TOM J
3053	BASWELL, LAWRENCE R
3059	RICCI, LAURA M
3070	OCCUPANT UNKNOWN,
	SUTTER HOME WINERY INC

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK LN 2005

1156 ALANTE CORP
1181 GERBER, JACQUELINE M
JACKSON, CLARE
OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 2000

1000	DUCKHORN VINEYARDS
1098	LEE, PAMELA K
	LOCKWOOD, GEORGIA L
	PHELPS, ROBERT
1105	OCCUPANT UNKNOWN,
1112	BARRO STATION BED & BREAKFAST
	WALKER, TARA J
1115	JOHNSON, JAMES R
1148	OCCUPANT UNKNOWN,
1150	STEELMAN, DENISE
1152	WINE COUNTRY INN
1154	ARCANIN, K P
	BOSTON REED EDUCATIONAL SERVICES
1157	WEBER, KATHI M
1165	OCCUPANT UNKNOWN,
1179	HUEBSCHLE, REBECCA
1189	THE EAGLE & THE ROSE INN
1199	ROSS, STEVEN L

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 2000

2959	HECKERT, RICHARD
2963	OCCUPANT UNKNOWN,
2993	MOONSAMMY, C V
2995	HOLGUIN, GARY
2997	STEPHENS, T R
2999	RAMOS, DAVID G
3001	OCCUPANT UNKNOWN,
3009	SCHAAB, PAMELA M
3010	BRAVA TERRACE
	HALPERT, F D
3019	OCCUPANT UNKNOWN,
3020	BEESWAX CANDLE FACTORY AND GIFT & GOURMET SHOP
	CANDLE FACTORY HURD BEESWAX AND GIFT & GOURMET
	HURD BEESWAX CANDLES
	HURD GIFTS & GOURMET
	NAPA VALLEY BEESWAX CANDLE FCTRY & GIFT & GRMT
3021	BISAGNO, ROY
3022	FREEMARK ABBEY HURD BEESWAX CANDLES
	FREEMARK ABBEY HURD GIFTS & GOURMET
	FREEMARK ABBEY WINERY
	MAHER & ASSOCIATES
3023	PETERSON, C M
3043	BOGARIN, CARLO
	RAMIREZ, ESTHER
	ROJAS, C
	SALDIVAR, SERGIO
	VAZQUEZ, E
	VISTA DEL VALLE
3047	OCCUPANT UNKNOWN,
3050	AHERN, FRANCES L
	HORROCKS, ALSTON
3051	MORGAN, TOM
3053	BASWELL, L R
3057	HAMER, ANTHONY S
3070	BIG PAW GRUB
	FOLIE A DEUX
	HARVEY, SCOTT

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK AVE 2000

1156 ALANTE CORPORATION
VANDENBOSCH, BRUNO
1181 GARCIA, GERARDO S
SCHRIEVE, RON

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 1995

1095	GREENE, MARION
1098	CAMPANIAN, FRAN
	MONDIEL, MANDY C
	WHITE, DOLLY E
1105	OCCUPANT UNKNOWNN
1112	BARRO STATION BED & BREAKFAST
	MINNICK, RICHARD D
1115	PARKINSON, DAVID L
1150	OCCUPANT UNKNOWNN
1152	WINE COUNTRY INN
1157	OCCUPANT UNKNOWNN
1159	MEYER, ADOLPH
1165	OCCUPANT UNKNOWNN
1179	MATHIS, JULI L
1181	VANDERBILT, PAIGE
1199	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 1995

2959	HECKERT, RICHARD
2963	OCCUPANT UNKNOWNN
2993	STONER, T
2995	HOLGUIN, GARY
2997	ZUIDEMA, RUDY
2999	MOUNTS, C W
3000	ELROD ANTIQUES
3001	CHESI, RICHARD
3010	BRAVA TERRACE
3019	HAYDEN, TIMOTHY
3020	HURD BEESWAX CANDLES
	HURD GIFTS & GOURMET
3021	BISAGNO, ROY
3022	ABBEY FREEMARK
	ABBEY RESTAURANT
	FREEMARK ABBEY WINERY
	RUTHERFORD HILL WINERY
3029	OCCUPANT UNKNOWNN
3043	BARRAGAN, MARIA
	BOGARIN, CONRADO
	FLORES, CALIXTR
3047	OCCUPANT UNKNOWNN
3051	MORGAN, TOM
3053	BASWELL, L R
3057	OCCUPANT UNKNOWNN
3070	FOLIE A DEUX WINERY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK AVE 1995

1156 ALANTE CORP
VANDENBOSCH, BRUNO
1181 BERTOLINI, FRED
SCHMITTER, RAYMOND D
WILLENBORG, KEVIN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

LODI LN 1992

1085	LODI SHOP THE
1095	GREENE, MARION
1098	CAMPANIAN, FRAN
	WHITE, DOLLY E
1105	LANDOR, WALTER
1112	BARRO STA BD&BRKFST
1150	SMITH, JAMES D
1152	WINE CNTRY INN
1159	MEYER, ADOLPH
1181	BROWNSCOMBE, DAVID

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SAINT HELENA HWY N 1992

2959	HECKERT, RICHARD
2963	LARSEN, IRVIN N
2995	HUDSPETH, ALLEN K
2999	MOUNTS, MADISON H
3000	ELROD ANTIQUES
3001	CHESI, RICHARD
3009	GARWOOD, C
3010	BRAVA TERRACE
3019	GERHARDT, ERIC F
3020	ABBEY RESTAURANT
	HURD BEESWAX CANDLS
3022	FREEMARK ABBEY WNRY
	RUTHERFORD HLL WNRY
3023	PETERSON, C M
3029	WESTCOTT, CONNIE E
3043	ROJAS, C
3050	CHAIREZ, F
	HORROCKS, ALSTON
3051	MORGAN, TOM
3070	FOLIE A DEUX

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

YORK AVE 1992

1181 BERTOLINI, FRED
WILLENBORG, KEVIN

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LODI LN 1986

★ 1 BUS 7 RES 0 NEW

LODI LN 94574 ST HELENA

1065	ARBOR ANTIQUES	963-2288	1
1085	BARREL BUILDERS	968-7914	7
1089	XXXX	00	
1095	GREENE MARION	963-3326	9
1097	ROUND HILL CELLARS	963-5251	2
1098	BOSWORTH M E	963-5532	5
	TRAVERS PETER F	963-2222	+6
	URESTI E	963-1625	4
	WHITE DOLLY E	963-8345	+6
1105	XXXX	00	
1148	SMITH NED L	963-7250	+6
1150	XXXX	00	
1152	WINE CNTRY INN	963-7077	7
1157	XXXX	00	
1159	MEYER A	963-2882	+6
1181	XXXX	00	
1199	YOUNG K	963-1609	4

★ 4 BUS 13 RES 4 NEW

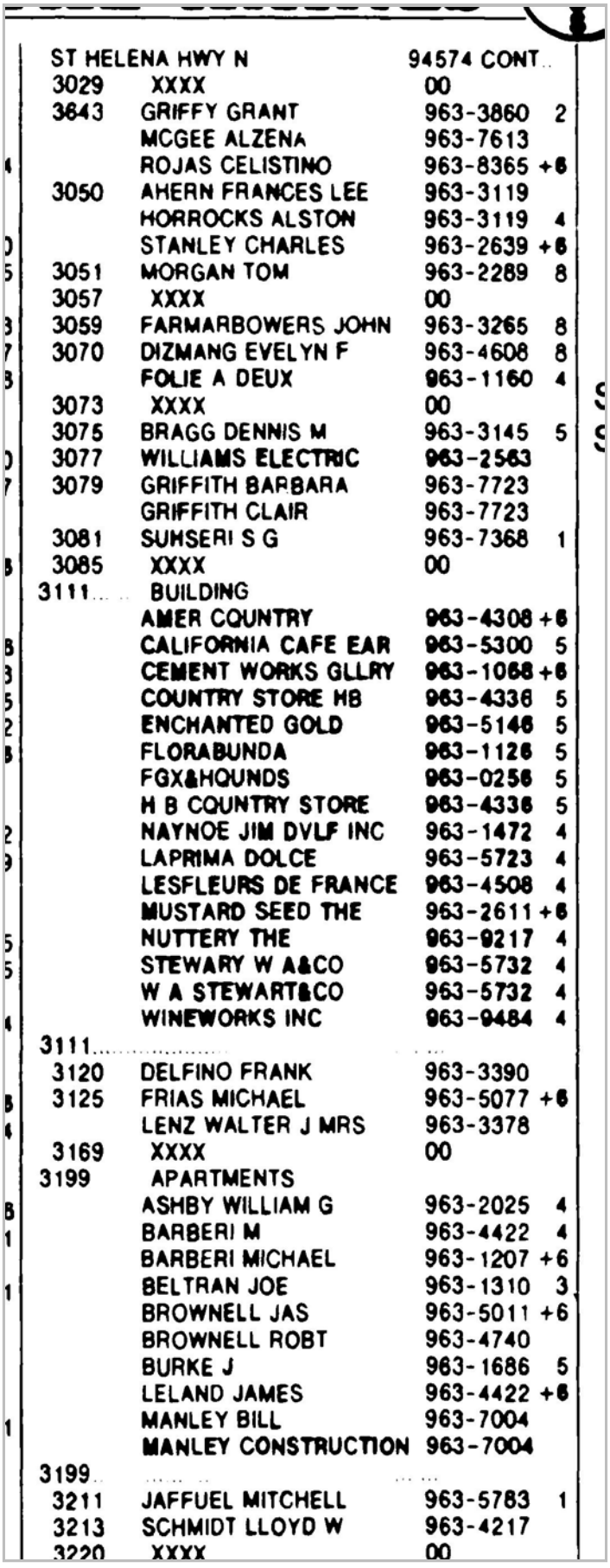
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SAINT HELENA HWY N 1986

	2899	XXXX	00	
5	2908	WILSON JOS	963-3375	
	2910	BURNS R B	963-7275	+6
	2925	MOORE JERRY	963-5520	5
6	2951	MORGAN DOROTHY L	963-3134	
		MORGAN THOS T	963-3134	
7	2955	ELOWER CHAS F	963-2341	8
	2959	HECKERT RICHARD	963-9547	3
	2963	HELM W A	963-3269	+6
	2993	DALRYMPLE W J	963-9192	2
7	2995	XXXX	00	
	2997	XXXX	00	
	2999	MOUNTS MADISON H	963-765C	
	3000	XXXX	00	
	3001	CHESI RICHARD	963-2884	2
	3009	XXXX	00	
	3019	BERRY FRED F	963-3591	
	3020	ARBEY RESTAURANT	963-2708	1
		COFFEE GAROEN	963-9380	9
		FREEMARK ABEEY	963-7211	4
		FREEMARK ASSEY GIPT	963-3033	
		FREEMARR ABBEY REST	963-2708	7
		HURD BEESWAX CANDLS	963-7211	
6		HURD GIFTS&GOURMT	963-3033	0
9	3021	FRENCH EDW B	963-3286	
	3022	DATAVINE	963-5261	3
2		FREEMARK ABBEY WINE	983-9664	
		FREEMARK ABBEY WNRY	983-9664	
		KNICKERBOCKERS	963-9276	5
8		ST HELENA VITICLTRL	983-5003	+6
		VINTAGE PREVIEWS	993-6262	+6
5		WOOD FRANKASONS	983-2672	
5	3023	LUMKES B	963-8622	+6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

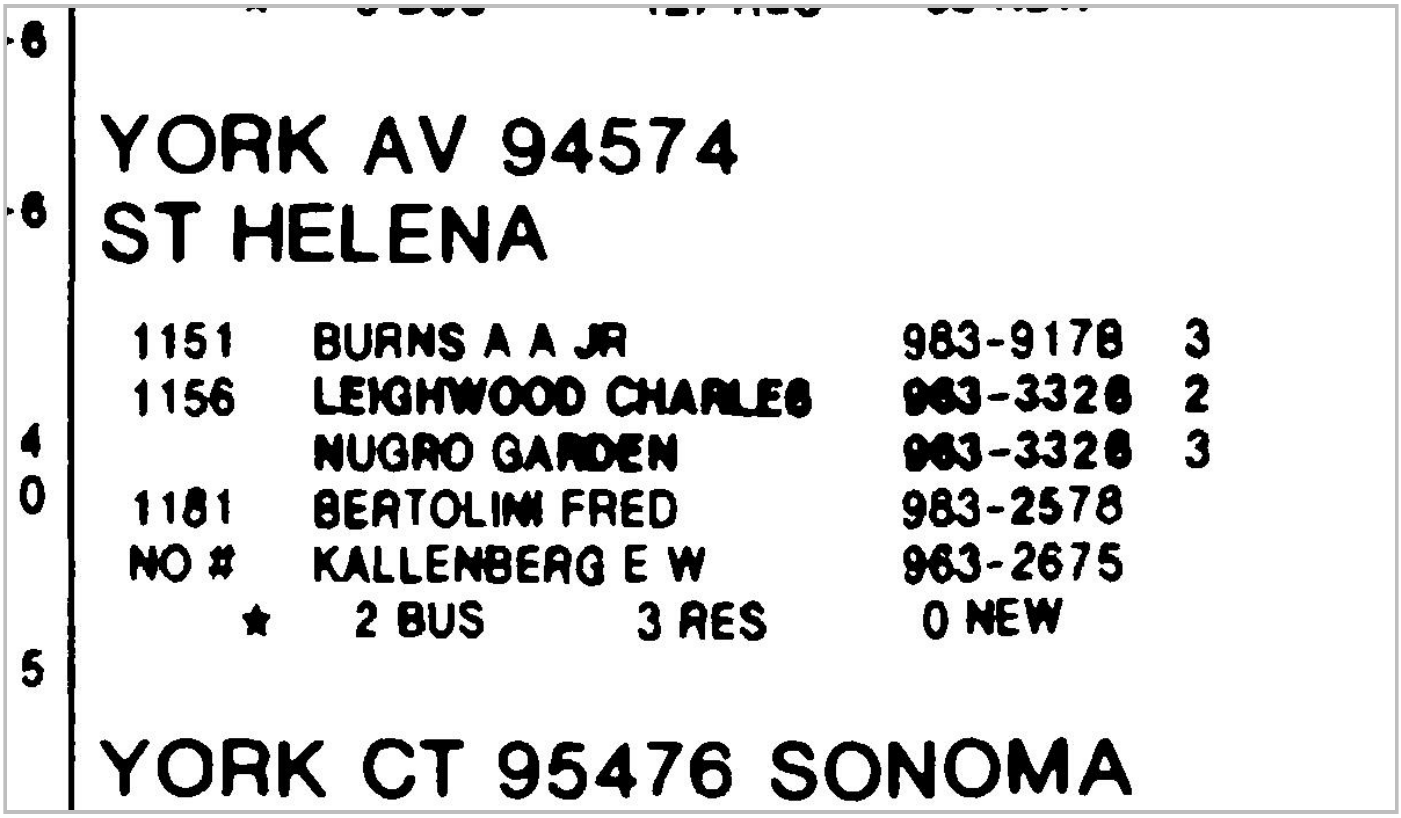
SAINT HELENA HWY N 1986



ST HELENA HWY N		94574 CONT..	
3029	XXXX	00	
3643	GRIFFY GRANT	963-3860	2
	MCGEE ALZENA	963-7613	
	ROJAS CELISTINO	963-8365	+6
3050	AHERN FRANCES LEE	963-3119	
	HORROCKS ALSTON	963-3119	4
	STANLEY CHARLES	963-2639	+6
3051	MORGAN TOM	963-2289	8
3057	XXXX	00	
3059	FARMARBOWERS JOHN	963-3265	8
3070	DIZMANG EVELYN F	963-4608	8
	FOLIE A DEUX	963-1160	4
3073	XXXX	00	
3075	BRAGG DENNIS M	963-3145	5
3077	WILLIAMS ELECTRIC	963-2563	
3079	GRIFFITH BARBARA	963-7723	
	GRIFFITH CLAIR	963-7723	
3081	SUHSERI S G	963-7368	1
3085	XXXX	00	
3111	BUILDING		
	AMER COUNTRY	963-4308	+6
	CALIFORNIA CAFE EAR	963-5300	5
	CEMENT WORKS GLLRY	963-1068	+6
	COUNTRY STORE HB	963-4336	5
	ENCHANTED GOLD	963-5146	5
	FLORABUNDA	963-1126	5
	FOX&HOUNDS	963-0256	5
	H B COUNTRY STORE	963-4336	5
	NAYNOE JIM DVLF INC	963-1472	4
	LAPRIMA DOLCE	963-5723	4
	LESFLEURS DE FRANCE	963-4508	4
	MUSTARD SEED THE	963-2611	+6
	NUTTERY THE	963-9217	4
	STEWARY W A&CO	963-5732	4
	W A STEWART&CO	963-5732	4
	WINEWORKS INC	963-9484	4
3111			
3120	DELFINO FRANK	963-3390	
3125	FRIAS MICHAEL	963-5077	+6
	LENZ WALTER J MRS	963-3378	
3169	XXXX	00	
3199	APARTMENTS		
	ASHBY WILLIAM G	963-2025	4
	BARBERI M	963-4422	4
	BARBERI MICHAEL	963-1207	+6
	BELTRAN JOE	963-1310	3
	BROWNELL JAS	963-5011	+6
	BROWNELL ROBT	963-4740	
	BURKE J	963-1686	5
	LELAND JAMES	963-4422	+6
	MANLEY BILL	963-7004	
	MANLEY CONSTRUCTION	963-7004	
3199			
3211	JAFFUEL MITCHELL	963-5783	1
3213	SCHMIDT LLOYD W	963-4217	
3220	XXXX	00	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

YORK AVE 1986



YORK AV 94574

ST HELENA

1151	BURNS A A JR	963-9178	3
1156	LEIGHWOOD CHARLES	963-3328	2
	NUGRO GARDEN	963-3328	3
1181	BERTOLINI FRED	963-2578	
NO #	KALLENBERG E W	963-2675	

★ 2 BUS 3 RES 0 NEW

YORK CT 95476 SONOMA

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LODI LN 1981

★ 0 BUS 11 RES 2 NEW

LODI LN 94574 ST HELENA

1065	**ARBOR ANTIQUES**	**963-2288** +1
1085	**BARREL BUILDERS**	**545-1708** 8
	BARRELL BUILDERS	**963-7914** 7
1089	XXXX	00
1095	GREENE MARION	963-3326 9
1097	**RIOUND HL CELL**	**953-5251** +1
1098	WHITE DOLLY	963-9951 0
	WHITE DOLLY E	963-9541 +1
1105	BELLER ALFRED C	963-2271
	BUSBY JOS P	963-2271
1148	NEIL ERIC R	963-4552 0
1150	HUNTER RICHARD H	963-2419 0
1152	WILLEMSTIEN M	963-4607 +1
	WINE COUNTRY INN	**963-7D77** 7
1157	XXXX	00
1181	XXXX	00
1199	COCHRAN MICHAEL R	963-5550 +1

★ 5 BUS 12 RES 5 NEW

LOFAS PL 94590 VALLEJO

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SAINT HELENA HWY N 1981

2849	GONSER W A	963-2571	
2867	STCLEMENT VINEYARDS	963-7221	
2899	GOBLER ROBERT A	963-4713	8
2993	XXXX	00	
2999	MOUNTS MADISON H	963-7656	5
3000	FINDINGS UNLIMITED	963-9201	8
3009	MCKAY JOHN	963-7469	0
3010	XXXX	00	
3020	XXXX	00	
3022	FREEMARK ABBEY WINE	963-9694	+1
	WOOD FRANK&SONS	963-2872	5
3029	PEPPIE E J	963-3928	
3043	GORALL GRAYSON	963-5790	+1
	MCGEE ALZENA	963-7613	
3047	FERRELL TOM	963-4319	
3050	AHERN FRANCES LEE	963-3119	
	LEWIS ALSTON	963-3119	6
3059	FARMERBOWERS JOHN	963-3285	8
3070	MANLEY CONSTRUCTION	963-7004	
3199	XXXX	00	
3211	JAFFUEL MITCHELL	963-5783	+1
3251	TRIONE ANTHONEY	963-3561	
3267	SKILLINGS B H	963-7674	
3275	HARMAN JOHN B	963-4387	9
	RINALDI THOMAS	963-5785	+1
3358	TURLEY LARRY	963-4704	7
	WINSLOW JOYCE	963-4704	+1
3369	XXXX	00	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

YORK AVE 1981

★ 12 BUS 115 RES 37 NEW

YORK AV 94574 ST HELENA

1151	PETERSEN FRED J	963-2096	6
1156	PLUMBE JOHN	963-7369	
1181	BERTOLINI FRED	963-2578	
NO #	KALLENBERG E W	963-2675	

★ 0 BUS 4 RES 0 NEW

YORK CT 95476 SONOMA

411	FLOSSMAN LOREN	996-9278	9

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LODI LN 1977

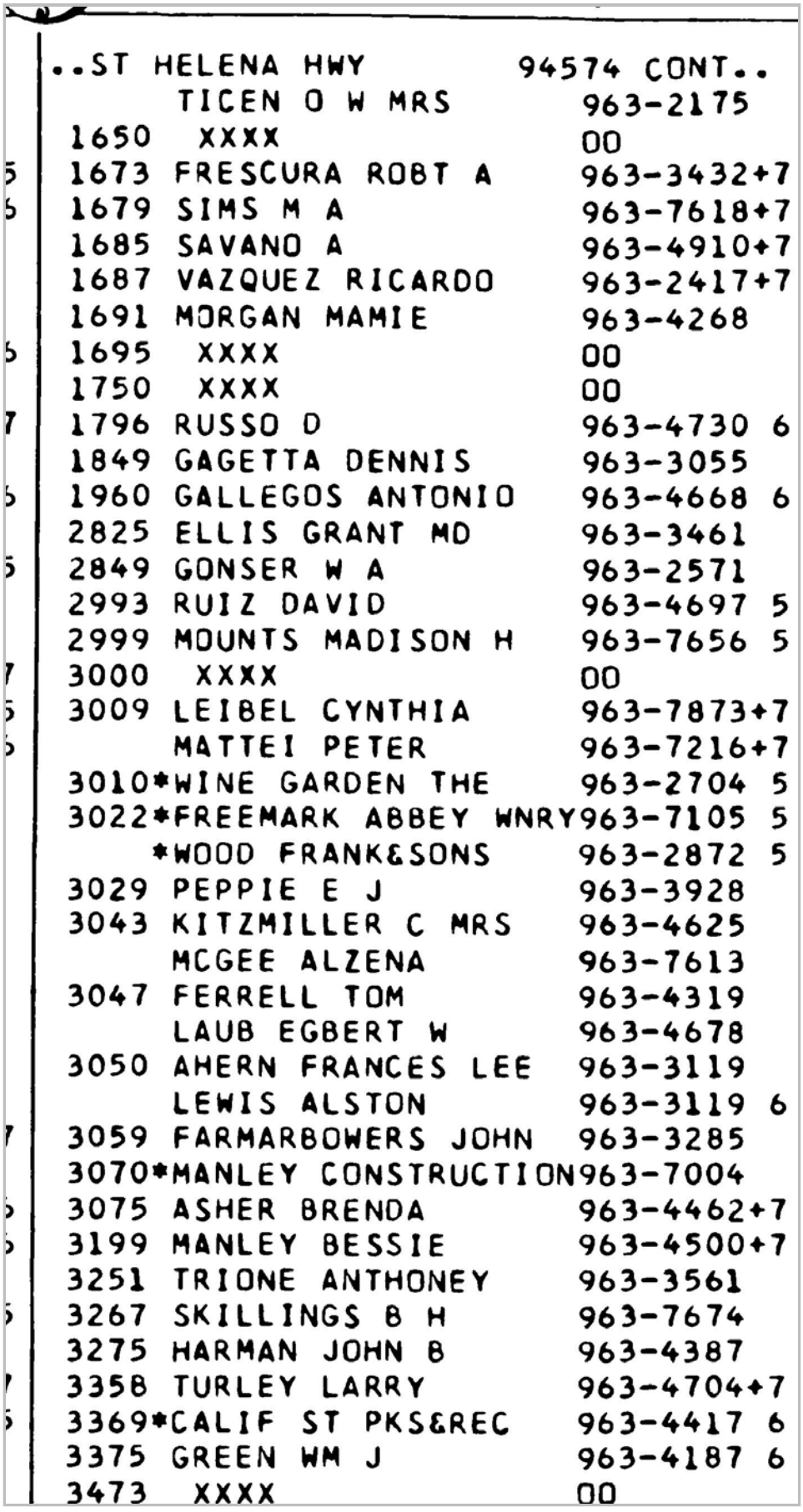
LODI LN 94574 ST HELENA

1085	*BARREL BUILDERS	963-7914+7
1089	XXXX	00
1095	*ARBOR ANTQ&ACCSSRS	963-2288+7
	*NAPA CLG LODI LANE	963-7777+7
	TITUS RUTH	963-2288+7
1097	*SPRING MOUNTN WNRY	963-3844+7
1098	OLES RUSSELL W	963-7787+7
	PRESTON CLEVELAND	963-2130
	WHITE DOLLY	963-9972
1105	BELLER ALFRED C	963-2271
	BUSBY JOS P	963-2271
1148	DUSSAULT A L	963-4320 6
1150	THOMAS EDW E	963-4988
1152	*WINE COUNTRY INN	963-7077+7
1157	LOVELAND MICK	963-4797 5
1179	BOMAR ROBT	963-3595
1181	XXXX	00
1199	COBIAN ALFONSO B	963-4153+7
	COBIAN ELIAS	963-4741+7
	* 5 BUS 14 RES 9 NEW	

LOFAS PL 94590 VALLEJO

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SAINT HELENA HWY N 1977



..ST HELENA HWY 94574 CONT..

		TICEN O W MRS	963-2175
	1650	XXXX	00
5	1673	FRESCURA ROBT A	963-3432+7
5	1679	SIMS M A	963-7618+7
	1685	SAVANO A	963-4910+7
	1687	VAZQUEZ RICARDO	963-2417+7
	1691	MORGAN MAMIE	963-4268
5	1695	XXXX	00
	1750	XXXX	00
7	1796	RUSSO D	963-4730 6
	1849	GAGETTA DENNIS	963-3055
5	1960	GALLEGOS ANTONIO	963-4668 6
	2825	ELLIS GRANT MD	963-3461
5	2849	GONSER W A	963-2571
	2993	RUIZ DAVID	963-4697 5
	2999	MOUNTS MADISON H	963-7656 5
7	3000	XXXX	00
5	3009	LEIBEL CYNTHIA	963-7873+7
5		MATTEI PETER	963-7216+7
	3010	*WINE GARDEN THE	963-2704 5
	3022	*FREEMARK ABBEY WNRY	963-7105 5
		*WOOD FRANK&SONS	963-2872 5
	3029	PEPPIE E J	963-3928
	3043	KITZMILLER C MRS	963-4625
		MCGEE ALZENA	963-7613
	3047	FERRELL TOM	963-4319
		LAUB EGBERT W	963-4678
	3050	AHERN FRANCES LEE	963-3119
		LEWIS ALSTON	963-3119 6
7	3059	FARMARBOWERS JOHN	963-3285
	3070	*MANLEY CONSTRUCTION	963-7004
5	3075	ASHER BRENDA	963-4462+7
5	3199	MANLEY BESSIE	963-4500+7
	3251	TRIONE ANTHONEY	963-3561
5	3267	SKILLINGS B H	963-7674
	3275	HARMAN JOHN B	963-4387
7	3358	TURLEY LARRY	963-4704+7
5	3369	*CALIF ST PKS&REC	963-4417 6
	3375	GREEN WM J	963-4187 6
	3473	XXXX	00

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

YORK AVE 1977

YORK AV 94574 ST HELENA

682B	FLANNERY FERN MRS	963-3076	
B	FLANNERY ROBT E	963-3076	
1151	PETERSEN FRED J	963-2096	6
1156	PLUMBE JOHN	963-7369	
1181	BERTOLINI FRED	963-2578	
	BERTOLINI G	963-4337	
NO #	KALLENBERG E W	963-2675	

* 0 BUS 7 RES 0 NEW

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

SAINT HELENA HWY N 1974

SACRAMENTO ST—Contd
PARK AV INTERSECTS
2711 ★ Woodall N Douglas 252-1857
2714 No Return
2716 ★ Rodriquez Herlinda Mrs
2717 Clancy Michl S 252-1258
2741 ★ Methven John F 255-0360
2751 O'Branovich James D 255-7075
MENLO AV INTERSECTS
2801 ★ Adamo Lennie ◎
2810 Tucker Martha J Mrs 224-0994
2812 Atwood Geo B 226-7042
2815 Napa Septic Tank Service 224-1748
Kroplin Wm H Jr ◎ 224-1748
2830 Gilbreath Rufus E ◎ 226-3348
2837 Raines Tony ◎ 255-0517
2839 Haseltine Roger P 255-3430
2851 Alley Geo N ◎ 224-6181
MYRTLE AV INTERSECTS
2910 Harrison Floyd C ◎ 224-1643
2920 Clifton Charles F ◎ 224-3281

43

ST HELENA HWY —FROM 1800 TRANCAS ST NORTHWEST

ZIP CODE 94558
2528 Jim's Auto Repair 276-2797
2530 Collins Motorcycle Shop 255-5833
Justice Auto Wreckers 226-2797
WISE DR BEGINS
2550 Jalisco Restaurant 224-8717
2574 ★ Dominges Marie
2576 Miller Larry 252-2944
2576a Dominguez Michaela Mrs

68

EL CENTRO AV BEGINS
3024 Bowers Edw A 255-8233
3030 Grandview Mobile Park 224-8438
Spaces
101 Hall Margt H Mrs 255-2558
103 Anderson Louis 224-7652
105 Cook Hazel M 224-7148
107 Carolan E H 224-8438
109 Langstaff Frances 224-5073
110 Mason Fred E 224-5632
111 Hicks Lee 224-2464
112 Reynolds Eliz Mrs 226-9805
113 Gradhandt Valerie
114 Krafft Marguerite Mrs 226-9078
115 Smith Eliz
116 Harner Hoyt 226-8981
117 Duncan Helen Mrs 224-2638
118 ★ Morrison Lawrence
119 Allen Steve ◎ 224-9176
120 Chapman Virgil H ◎ 224-6488
121 ★ Krieg Arth F
122 Vacant
123 Baker Mae ◎
124 Clarke J W ◎ 226-2166
125 Mc Fadden Eug 224-3515
127 ★ Lang Joe S 255-4639
128 Smith Keith ◎ 226-3012
129 Cassayre Bernadina E Mrs ◎ 226-7539
130 Ronback Eric
131 ★ Homrighouse Jay D 252-3531
132 Millitello Madeline
133 Rogers Mercedes Mrs 224-0100
134 No Return
135 Conzelman Margt I Mrs 226-6050
136 Farr Frances Mrs 224-5902
137 Salwesser Peter 255-4019
139 Terrell J Lee 224-8745
206 Wells Lawrence B 226-7867
209 Stacey Raymond ◎ 255-2918
210 Parker Doris J Mrs 224-4681
211 Williamson James 255-0387
212 Deaver Harland A 225-1383
213 Bradshaw Lillian Mrs
214 Sohl Henry W 224-6912
215 Cunningham Patricia 255-2622
216 ★ Wolf Buster 226-3074
217 Weaver Ralph B 255-174

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

SAINT HELENA HWY N 1974

ST HELENA HWY—Contd

218 ★ Tindall Archie
219 O'Gara Gladys L Mrs 224-2953
220 Fannin Walter 255-2189
221 ★ Forman Willie
222 Moore Sylvia
223 Jones Edna Mrs 224-4083
224 Andersen Viola Mrs 224-4266
230 Watt Ella Mrs ◎
231 Wilson Hazel Mrs 224-5311
232 Martz Eddie
233 Bott Victor W
234 Ingram I 224-8151
235 Fuerst Geo A 224-9513
236 Landage Kenneth
237 Dibler Ernst 255-5329
301 Crone Glenn ◎
303 Allekna Emma L Mrs ◎ 224-3644
305 ★ Griffin Rachel ◎
307 Thompson Edw ◎ 226-3507
309 Mc Kee Mary ◎
311 Scott Mildred D Mrs ◎ 224-5028
313 Erlandson Oscar L ◎ 224-9186
315 Farrell Russell ◎ 255-1237
317 Weaver Gertrude Mrs ◎ 226-2955
319 Claypool Ruben 255-8514
321 Vacant
323 Bauer Carl
325 Rodeen Arth G 226-9417
327 Roberta Thelma 224-3030
333 ★ Mc Daniel May D 224-5853
335 Franks Carl B 226-5737
337 De Souto Anna Mrs 255-7623
401 Morgan Dorothy B Mrs 226-2945
403 Cook Arth
405 Mc Daniel Henry 226-7234
407 Sallade Glenn D 255-1250
409 Kinsinger Wm F 224-1258
411 Reigil Irene
413 Wilson Wm
415 Anderson Clifford 255-5220
417 Alves Thos A 224-2943
419 Eiseman Jack 224-5886
420 Hobson Hayden 255-8342
421 ★ Moyer Otis H Rev 224-2712
422 Horsky Laura M Mrs 255-4233
423 Southgate Al 224-4466
424 Pohl Geo 255-5136
425 Kermode Lillian Mrs 226-8928
426 Mistak Chester 255-2304
427 ★ Cooper Oma L
428 Steinke Fredk 255-0176
429 Davidson Flora Mrs 226-3889

SALVADOR AV BEGINS

4066 ★ Gasser Victor 226-6034
4068 ★ Cook Ron
4070 Oberg Carl ◎ 224-4728
4076 Dellenbaugh F H ◎ 226-5023
4106 Avrey Rosamond B ◎ 226-8814
4120 Doll House The tavern 255-5144
4120a ★ Williams Richd
Rear Strack Wm D ◎ 255-5139
4120b Apartments
1 Vacant
2 ★ Davis Buck
3 Amaral Antinio B 255-8464
4 Williams Roger
5 ★ Potts David
6 Glenn Christine H
4457 ★ Bruno Geo
4465 Parker Roy ◎ 226-8767
4475 ★ Garfield Melvin L
4477 ★ Hemminger Fred
4479 ★ Berg Jerry
4481 Rose W C
4555 Vacant
4575 ★ Barr Robt J 224-1338
4577 Mountain Rembert F ◎ 226-8861
4581 Bender Wm J 226-2998
5091 House & Garden Shop furn dlr 226-8552
Red Hen Fashions womens clo 224-3782
Red Hen Restaurant 255-9801
5125 ★ Foote Gordon H
5127 Bonifield Michl L ◎ 224-1852
5129 Palmer Paul D 224-6904

Napa, Calif. (94558)
704 Franklin St.
Phone 226-0000

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

SAINT HELENA HWY N 1969

224-1643
2920 Clifton Charles F

42

ST HELENA HWY —FROM 1800 TRANCAS ST NORTHWEST

ZIP CODE 94558
2150 Apartments
1 Vacant
2 Grogan Sylvester 224-6785
3 Freeman Donald
4 Howell Alan
5 Vacant
2528 Jim's Auto Repair 224-8585
2530 Collins Motorcycle Shop 255-5833
Justice Auto Wreckers 226-2797
WISE DR BEGINS
2546 Salvador Antiques 226-5701
Zerba Felix ◎ 226-5701
2550 Jalisco Restaurant 224-8717
2576 Mealey Grant ◎ 224-9189
2576a Ruiz Frank S ◎
EL CENTRO AV BEGINS
3022 Knight's Trenching & Sewer Construction 224-2301
Minor Fredk 255-9154
3030 Grandview Mobile Park 224-8438

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

SAINT HELENA HWY N 1969

ST HELENA HWY—Contd

Spaces
101 Hall Margt H Mrs
103 Anderson Louis
105 Labsinger Luella
107 Swift Dean 224-8438
109 Langstaff Frances
110 Adams Viola 226-6448
111 Browne Leroy
112 Reynolds Eliz Mrs
113 Gradhandt Carl
114 Krafft Marguerite Mrs 226-9078
115 Brackin Inez M
116 Harner Hoit
117 Duncan Helen Mrs
118 Mather Rena Mrs
119 Hoffman Marion
120 Chapman Virgil H 224-6488
121 Gustin Etta Mrs
122 Spahr Charles R
123 Pierce Ramona Mrs 224-8274
124 Clarke J W 226-2166
125 Mc Fadden Eug 224-3515
127 Askren David
128 Smith Keith
129 Cassayre Bernadina E Mrs
130 Ronback Eric
131 Cuddihy C Mrs
132 Crossland Allen B
133 Rogers Frank V 224-0100
134 Brott Roger
135 Landage Michl
136 Farr Joe S 224-5902
137 Mc Murdo Geo A
139 Vacant
206 Wells Lawrence B
209 Stacey Raymond
210 Parker Doris Mrs 224-4681
211 Williamson James
212 Deaver Harland A 225-1383
213 Bradshaw Lillian Mrs
214 Sohl Henry W 224-6912
215 Cunningham Patricia
216 Son Herbert L 224-6453
217 Weaver Ralph
218 Cunningham Frona Mrs
219 O'Gara Gladys 224-2953
220 Fannin Walter
221 Claudine Anthony
223 Jones Edna Mrs
224 Andersen Arth
230 Watt Ella Mrs
231 Wilson Hazel Mrs
232 Martz Edw L 224-3610
233 Bott Victor
234 Ingram E S 224-8151
235 Fuerst Geo A 224-9513
236 Hulford Kenneth
237 Dibler Ernst
309 Kelly Rose Mrs
311 Scott Mildred D Mrs 224-5028
313 Erlandson Oscar
315 Farrell Russell
317 Weaver Gertrude Mrs
319 Claypool Rubin
321 Brieltz Chris J 255-2164
325 Rodeen Arth
327 Roberta Edw
333 Freisheim A Ray
335 Franks Carl
337 De Souto Anne Mrs
401 Morgan Edw L 226-2945
403 Knight Robt
405 Mc Daniels Henry
407 Sallade Glenn D
409 Kinsinger Wm F 224-1258
411 Boulet Gerard P 226-9561
413 Landage Kenneth R 255-2024
415 Anderson Clifford
417 Alves Thos

STREET CONTINUED

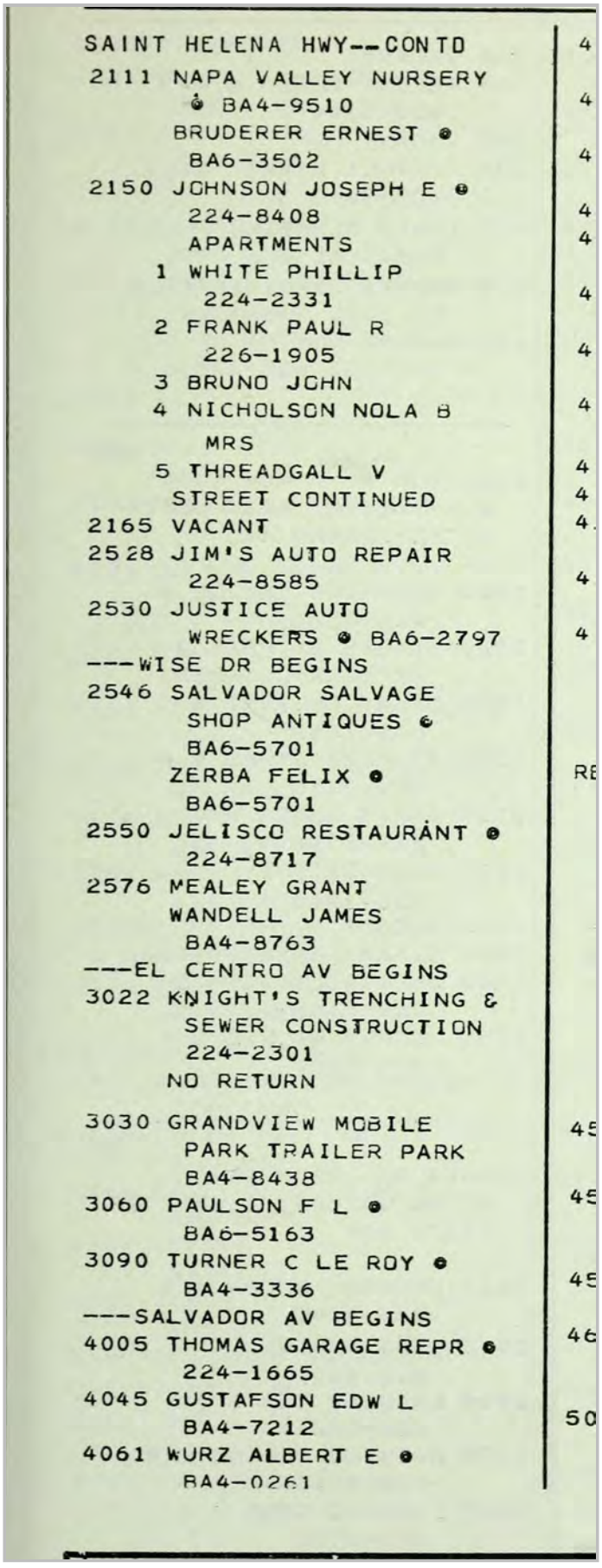
3090 Vacant

SALVADOR AV BEGINS

4005 Carl's Place repr shop 224-9554
Thomas Garage 224-1665
4045 Gustafson Edw L ◎ 224-7212
4061 Hurlburt James ◎ 226-1763
4063 Newton Robt D ◎ 224-6483
4065 Smith Ina Mrs ◎ 226-9795
4067 Swindell Jack
4068 Bradley Val J 255-7101
4069 Edenfield John W ◎ 255-2541
4070 Oberg Carl ◎ 224-4728
4071 Putnam Pauline Mrs ◎ 226-6970
4078 Dellenbaugh F H 226-5023
4099 No Return
4101 Dorward Fred E
4103 Bruno Geo ◎ 226-5159
4106 Avrey Rosamond B ◎ 226-8814
4115a Vacant
4115b Fimby Ray 226-5976
4115c Newton Glenn J ◎ 224-0870
4115d Parker Roy J 226-8767

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

SAINT HELENA HWY N 1965



SAINT HELENA HWY--CONTD
2111 NAPA VALLEY NURSERY
BA4-9510
BRUDERER ERNEST
BA6-3502
2150 JOHNSON JOSEPH E
224-8408
APARTMENTS
1 WHITE PHILLIP
224-2331
2 FRANK PAUL R
226-1905
3 BRUNO JOHN
4 NICHOLSON NOLA B
MRS
5 THREADGALL V
STREET CONTINUED
2165 VACANT
2528 JIM'S AUTO REPAIR
224-8585
2530 JUSTICE AUTO
WRECKERS BA6-2797
---WISE DR BEGINS
2546 SALVADOR SALVAGE
SHOP ANTIQUES
BA6-5701
ZERBA FELIX
BA6-5701
2550 JELISCO RESTAURANT
224-8717
2576 MEALEY GRANT
WANDELL JAMES
BA4-8763
---EL CENTRO AV BEGINS
3022 KNIGHT'S TRENCHING &
SEWER CONSTRUCTION
224-2301
NO RETURN
3030 GRANDVIEW MOBILE
PARK TRAILER PARK
BA4-8438
3060 PAULSON F L
BA6-5163
3090 TURNER C LE ROY
BA4-3336
---SALVADOR AV BEGINS
4005 THOMAS GARAGE REPR
224-1665
4045 GUSTAFSON EDW L
BA4-7212
4061 WURZ ALBERT E
BA4-0261

Appendix E

EDR Radius Map Report

Freemark Abbey Winery - Alumbaugh Property
3000-3022 Saint Helena Hwy N
Saint Helena, CA 94574

Inquiry Number: 6753600.2s
November 17, 2021

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	38
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-11
Physical Setting Source Map Findings	A-13
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3000-3022 SAINT HELENA HWY N
SAINT HELENA, CA 94574

COORDINATES

Latitude (North):	38.5247940 - 38° 31' 29.25''
Longitude (West):	122.4963690 - 122° 29' 46.92''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	543901.8
UTM Y (Meters):	4263958.0
Elevation:	283 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12008179 SAINT HELENA, CA
Version Date:	2018
Northwest Map:	12008095 CALISTOGA, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140604
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3000-3022 SAINT HELENA HWY N
SAINT HELENA, CA 94574

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	JACKSON FAMILY WINES	3022 ST. HELENA HWY	FINDS, ECHO		TP
A2	JACKSON FAMILY INVES	3022 ST HELENA HWY	HAZNET, HWTS		TP
A3	JACKSON FAMILY WINES	3022 ST. HELENA HWY	RCRA NonGen / NLR		TP
A4	FREEMARK ABBEY WINER	3022 ST. HELENA HWY	CIWQS		TP
A5	FREEMARK ABBEY	3022 ST HELENA PO BO	CIWQS		TP
A6	FREEMARK ABBY	3022 ST HELENA HWY	FTTS, HIST FTTS		TP
A7	FREEMARK ABBEY WINER	3022 SAINT HELENA HW	FINDS		TP
A8	JACKSON FAMILY WINES	3022 ST. HELENA HWY	HWTS		TP
A9	MONITORING STATION	3022 ST HELENA HWY	CERS		TP
A10	FREEMARK ABBEY	3022 ST HELENA	FTTS, HIST FTTS		TP
A11	MONITORING STATION	3022 ST HELENA HWY	FINDS		TP
A12	FREEMARK ABBEY	3022 N ST. HELENA HW	LUST		TP
A13	FREEMARK ABBEY WINER	3022 SAINT HELENA HW	WDS, CERS		TP
A14	FREEMARK ABBEY	3022 ST HELENA	NPDES, CERS		TP
A15	FREEMARK ABBY WINERY	3022 N SAINT HELENA	HAZNET, HWTS		TP
A16	FREEMARK ABBY WINERY	3022 SAINT HELENA HW	HAZNET, HWTS		TP
A17	FREEMARK ABBEY	3022 ST HELENA	FINDS, ECHO		TP
18	BUCKHORN TRAILER PAR	3043 ST HELENA HWY	UST	Higher	72, 0.014, WNW
B19	FRED A. BERTOLINI	1181 YORK LN	SWEEPS UST	Lower	494, 0.094, SE
B20	FRED A BERTOLINI	1181 YORK LANE	HIST UST	Lower	494, 0.094, SE
C21	DUCKHORN VINEYARDS	3027 SILVERADO TRL	LUST, HIST UST, CERS	Lower	2054, 0.389, ENE
C22	DUCKHORN VINEYARDS	3027 SILVERADO TRL	LUST, Cortese	Lower	2054, 0.389, ENE
C23	DUCKHORN VINEYARDS	3027 SILVERADO TRL	SWEEPS UST, HIST CORTESE	Lower	2054, 0.389, ENE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
JACKSON FAMILY WINES 3022 ST. HELENA HWY SAINT HELENA, CA 94574	FINDS Registry ID:: 110070400295 ECHO Registry ID: 110070400295	N/A
JACKSON FAMILY INVES 3022 ST HELENA HWY SAINT HELENA, CA 94574	HAZNET GEPAID: CAC002808312 HWTS	N/A
JACKSON FAMILY WINES 3022 ST. HELENA HWY SAINT HELENA, CA 94574	RCRA NonGen / NLR EPA ID:: CAC002966815	CAC002966815
FREEMARK ABBEY WINER 3022 ST. HELENA HWY NAPA (County), CA 94574	CIWQS	N/A
FREEMARK ABBEY 3022 ST HELENA PO BO SAINT HELENA, CA 94574	CIWQS	N/A
FREEMARK ABBY 3022 ST HELENA HWY SAINT HELENA, CA 94574	FTTS Database: FTTS INSP, Date of Government Version: 04/09/2009 HIST FTTS Database: HIST FTTS INSP, Date of Government Version: 10/19/2006	N/A
FREEMARK ABBEY WINER 3022 SAINT HELENA HW SAINT HELENA, CA 94574	FINDS Registry ID:: 110055854142	N/A
JACKSON FAMILY WINES 3022 ST. HELENA HWY SAINT HELENA, CA 94574	HWTS	N/A
MONITORING STATION 3022 ST HELENA HWY NAPA, CA 94558	CERS	N/A
FREEMARK ABBEY 3022 ST HELENA SAINT HELENA, CA 94574	FTTS Database: FTTS INSP, Date of Government Version: 04/09/2009 HIST FTTS Database: HIST FTTS INSP, Date of Government Version: 10/19/2006	N/A

EXECUTIVE SUMMARY

MONITORING STATION 3022 ST HELENA HWY NAPA, CA 94558	FINDS Registry ID:: 110020817696	N/A
FREEMARK ABBEY 3022 N ST. HELENA HW ST. HELENA, CA 94574	LUST Database: NAPA CO. LUST, Date of Government Version: 01/09/2017 Status: Open Permit ID: 248313	N/A
FREEMARK ABBEY WINER 3022 SAINT HELENA HW SAINT HELENA, CA 94574	WDS Facility Status: A Facility Id: 2 28I016546 CERS	N/A
FREEMARK ABBEY 3022 ST HELENA SAINT HELENA, CA 94574	NPDES Facility Status: Active CERS	N/A
FREEMARK ABBY WINERY 3022 N SAINT HELENA SAINT HELENA, CA 94574	HAZNET GEPAID: CAC002583474 HWTS	N/A
FREEMARK ABBY WINERY 3022 SAINT HELENA HW SAINT HELENA, CA 94574	HAZNET GEPAID: CAC002631202 HWTS	N/A
FREEMARK ABBEY 3022 ST HELENA SAINT HELENA, CA 94574	FINDS Registry ID:: 110070090389 ECHO Registry ID: 110070090389	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ---------- EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

CPS-SLIC ---- Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
AST ---- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing
VCP ---- Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS ---- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---- Waste Management Unit Database
SWRCY ---- Recycler Database
HAULERS ---- Registered Waste Tire Haulers Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ---- CERS HAZ WASTE
US CDL ---- National Clandestine Laboratory Register
AQUEOUS FOAM ---- Former Fire Training Facility Assessments Listing
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

CERS TANKS ---- California Environmental Reporting System (CERS) Tanks
CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information

DEED ---------- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
CHMIRS ---------- California Hazardous Material Incident Report System
LDS ---------- Land Disposal Sites Listing
MCS ---------- Military Cleanup Sites Listing
SPILLS 90 ---------- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ---------- Formerly Used Defense Sites
DOD ---------- Department of Defense Sites
SCRD DRYCLEANERS ---------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---------- Financial Assurance Information
EPA WATCH LIST ---------- EPA WATCH LIST
2020 COR ACTION ---------- 2020 Corrective Action Program List
TSCA ---------- Toxic Substances Control Act
TRIS ---------- Toxic Chemical Release Inventory System
SSTS ---------- Section 7 Tracking Systems
ROD ---------- Records Of Decision
RMP ---------- Risk Management Plans
RAATS ---------- RCRA Administrative Action Tracking System
PRP ---------- Potentially Responsible Parties
PADS ---------- PCB Activity Database System
ICIS ---------- Integrated Compliance Information System
MLTS ---------- Material Licensing Tracking System
COAL ASH DOE ---------- Steam-Electric Plant Operation Data
COAL ASH EPA ---------- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---------- PCB Transformer Registration Database
RADINFO ---------- Radiation Information Database
DOT OPS ---------- Incident and Accident Data
CONSENT ---------- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---------- Indian Reservations
FUSRAP ---------- Formerly Utilized Sites Remedial Action Program
UMTRA ---------- Uranium Mill Tailings Sites
LEAD SMELTERS ---------- Lead Smelter Sites
US AIRS ---------- Aerometric Information Retrieval System Facility Subsystem
US MINES ---------- Mines Master Index File
ABANDONED MINES ---------- Abandoned Mines
DOCKET HWC ---------- Hazardous Waste Compliance Docket Listing
UXO ---------- Unexploded Ordnance Sites
FUELS PROGRAM ---------- EPA Fuels Program Registered Listing
CA BOND EXP. PLAN ---------- Bond Expenditure Plan
CUPA Listings ---------- CUPA Resources List
DRYCLEANERS ---------- Cleaner Facilities
EMI ---------- Emissions Inventory Data
ENF ---------- Enforcement Action Listing
Financial Assurance ---------- Financial Assurance Information Listing
ICE ---------- ICE
HWP ---------- EnviroStor Permitted Facilities Listing
HWT ---------- Registered Hazardous Waste Transporter Database
MINES ---------- Mines Site Location Listing
MWMP ---------- Medical Waste Management Program Listing

PEST LIC ---- Pesticide Regulation Licenses Listing
PROC ---- Certified Processors Database
Notify 65 ---- Proposition 65 Records
UIC ---- UIC Listing
UIC GEO ---- UIC GEO (GEOTRACKER)
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WIP ---- Well Investigation Program Case List
MILITARY PRIV SITES ---- MILITARY PRIV SITES (GEOTRACKER)
PROJECT ---- PROJECT (GEOTRACKER)
WDR ---- Waste Discharge Requirements Listing
NON-CASE INFO ---- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ---- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ---- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---- Well Stimulation Project (GEOTRACKER)
MINES MRDS ---- Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---- Recovered Government Archive Solid Waste Facilities List
RGA LUST ---- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the

Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUCKHORN VINEYARDS	***3027 SILVERADO TRL***	***ENE 1/4 - 1/2 (0.389 mi.)***	***C21***	***33***
Database: LUST, Date of Government Version: 06/03/2021 Status: Completed - Case Closed Global Id: T0605500053				
DUCKHORN VINEYARDS	***3027 SILVERADO TRL***	***ENE 1/4 - 1/2 (0.389 mi.)***	***C22***	***36***
Database: LUST REG 2, Date of Government Version: 09/30/2004 date9: 7/20/1993 Facility Id: 28-0055 Facility Status: Case Closed				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BUCKHORN TRAILER PAR	3043 ST HELENA HWY	WNW 0 - 1/8 (0.014 mi.)	18	32
Database: NAPA CO. UST, Date of Government Version: 09/05/2019 Facility Id: NAPA0388				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FRED A. BERTOLINI	1181 YORK LN	SE 0 - 1/8 (0.094 mi.)	B19	32
Status: A Tank Status: A Comp Number: 40459				

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FRED A BERTOLINI Facility Id: 00000040459	1181 YORK LANE	SE 0 - 1/8 (0.094 mi.)	B20	33

Other Ascertainable Records

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 06/17/2021 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUCKHORN VINEYARDS Cleanup Status: COMPLETED - CASE CLOSED	***3027 SILVERADO TRL***	***ENE 1/4 - 1/2 (0.389 mi.)***	***C22***	***36***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

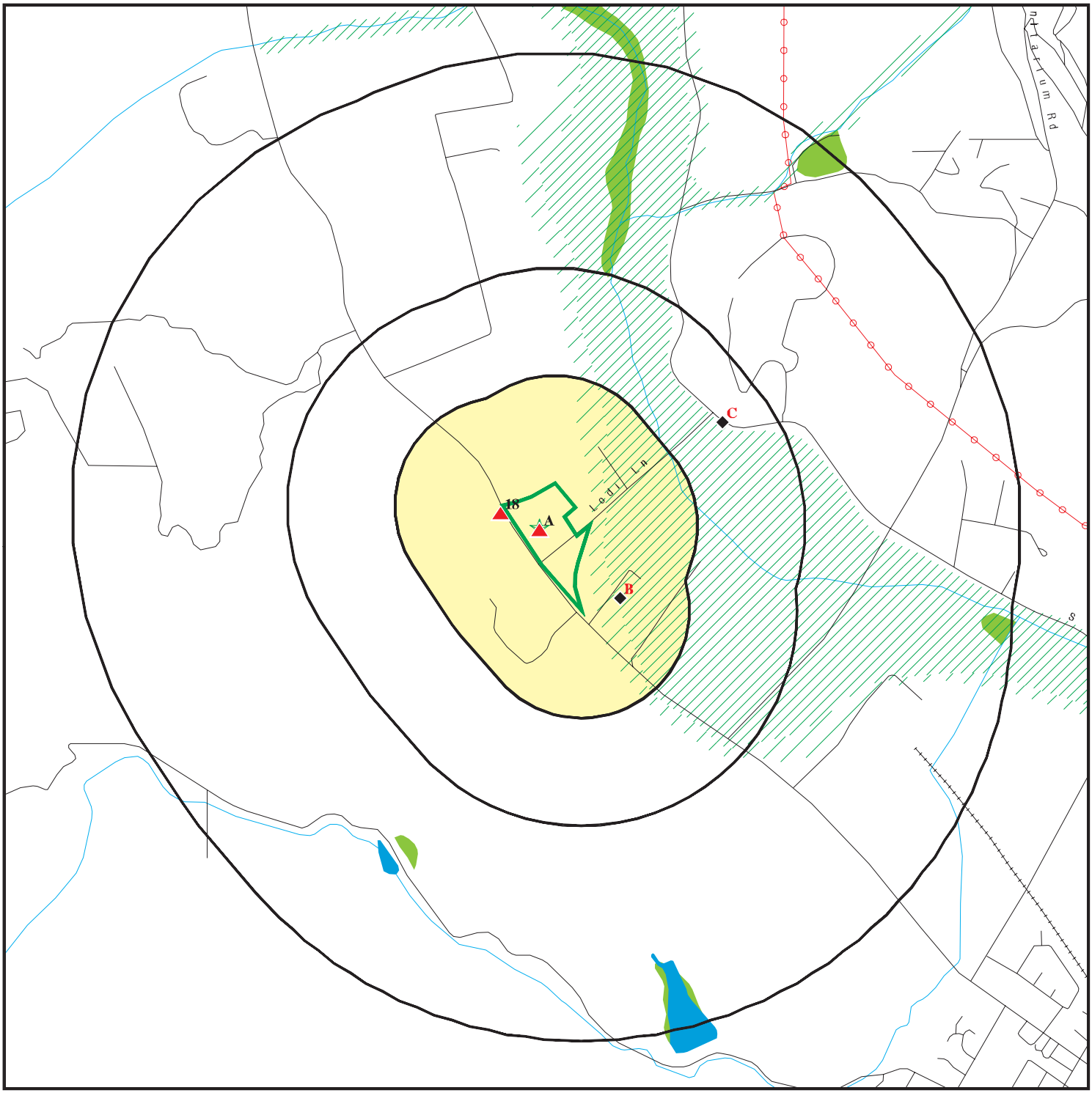
A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUCKHORN VINEYARDS Reg Id: 28-0055	***3027 SILVERADO TRL***	***ENE 1/4 - 1/2 (0.389 mi.)***	***C23***	***36***

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6753600.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

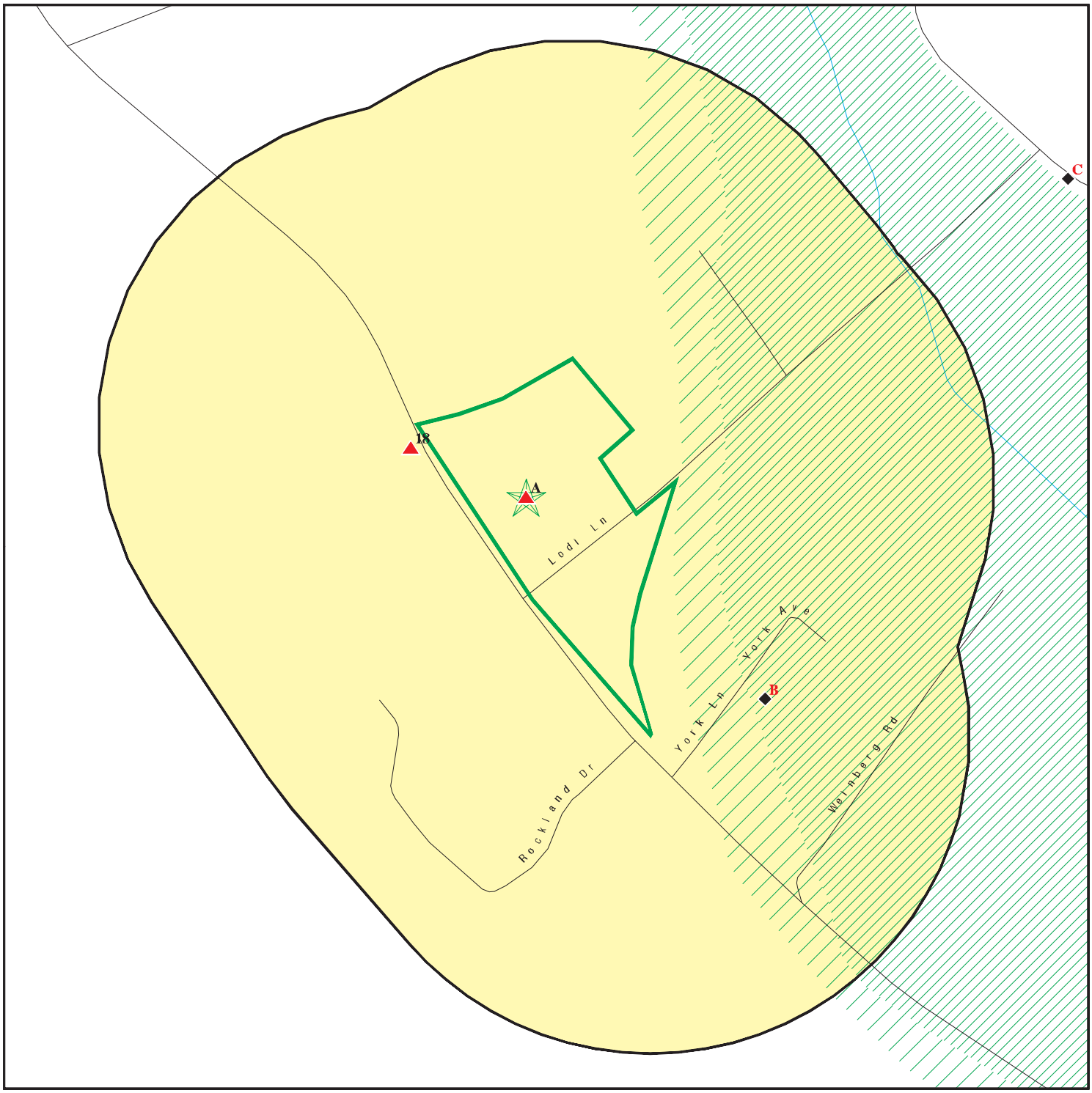
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Freemark Abbey Winery - Alumbaugh Property	CLIENT:	Environmental Risk Assessors
ADDRESS:	3000-3022 Saint Helena Hwy N Saint Helena CA 94574	CONTACT:	Lita Freeman
LAT/LONG:	38.524794 / 122.496369	INQUIRY #:	6753600.2s
		DATE:	November 17, 2021 9:05 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

DETAIL MAP - 6753600.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Freemark Abbey Winery - Alumbaugh Property	CLIENT:	Environmental Risk Assessors
ADDRESS:	3000-3022 Saint Helena Hwy N Saint Helena CA 94574	CONTACT:	Lita Freeman
LAT/LONG:	38.524794 / 122.496369	INQUIRY #:	6753600.2s
		DATE:	November 17, 2021 9:06 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500	1	0	0	2	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	0	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250	1	0	0	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001	2	0	NR	NR	NR	NR	2
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001	2	0	NR	NR	NR	NR	2
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001	4	0	NR	NR	NR	NR	4
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001	2	0	NR	NR	NR	NR	2
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001	3	0	NR	NR	NR	NR	3
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001	1	0	NR	NR	NR	NR	1
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001	1	0	NR	NR	NR	NR	1
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001	2	0	NR	NR	NR	NR	2
CERS	0.001	3	0	NR	NR	NR	NR	3
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP	4	NR	NR	NR	NR	NR	4
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		26	3	0	4	0	0	33

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **JACKSON FAMILY WINES - FREEMARK ABBEY** **FINDS 1024611908**
Target **3022 ST. HELENA HWY** **ECHO N/A**
Property **SAINT HELENA, CA 94574**

Site 1 of 17 in cluster A

Actual:
283 ft.

FINDS:
Registry ID: 110070400295

Click Here:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1024611908
Registry ID:	110070400295
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110070400295
Name:	JACKSON FAMILY WINES - FREEMARK ABBEY
Address:	3022 ST. HELENA HWY
City,State,Zip:	SAINT HELENA, CA 94574

A2 **JACKSON FAMILY INVESTMENTS** **HAZNET S118914509**
Target **3022 ST HELENA HWY** **HWTS N/A**
Property **SAINT HELENA, CA 94574**

Site 2 of 17 in cluster A

Actual:
283 ft.

HAZNET:

Name:	JACKSON FAMILY INVESTMENTS
Address:	3022 ST HELENA HWY
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574
Contact:	JACKSON FAMILY INVESTMENTS
Telephone:	7075544000
Mailing Name:	Not reported
Mailing Address:	425 AVIATION BLVD
Year:	2015
Gepaid:	CAC002808312
TSD EPA ID:	CAD982042475
CA Waste Code:	151 - Asbestos containing waste
Disposal Method:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.84

Additional Info:

Year:	2015
Gen EPA ID:	CAC002808312
Shipment Date:	20150413

JACKSON FAMILY INVESTMENTS (Continued) **S118914509**

Creation Date:	8/21/2015 22:15:38
Receipt Date:	20150416
Manifest ID:	014215365JJK
Trans EPA ID:	CAL923255012
Trans Name:	JAKELA INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD982042475
Trans Name:	RECOLOGY HAY ROAD
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	151 - Asbestos-containing waste
RCRA Code:	Not reported
Meth Code:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons:	1.84
Waste Quantity:	8
Quantity Unit:	Y
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

HWTS:

Name:	JACKSON FAMILY INVESTMENTS
Address:	3022 ST HELENA HWY
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574
EPA ID:	CAC002808312
Inactive Date:	06/23/2015
Create Date:	03/24/2015
Last Act Date:	06/24/2015
Mailing Name:	Not reported
Mailing Address:	425 AVIATION BLVD
Mailing Address 2:	Not reported
Mailing City,State,Zip:	SANTA ROSA, CA 95403
Owner Name:	JACKSON FAMILY INVESTMENTS
Owner Address:	425 AVIATION BLVD
Owner Address 2:	Not reported
Owner City,State,Zip:	SANTA ROSA, CA 95403
Contact Name:	JACKSON FAMILY INVESTMENTS
Contact Address:	425 AVIATION BLVD
Contact Address 2:	Not reported
City,State,Zip:	SANTA ROSA, CA 95403

A3 **JACKSON FAMILY WINES - FREEMARK ABBEY** **RCRA NonGen / NLR** **1024747043**
Target **3022 ST. HELENA HWY** **CAC002966815**
Property **SAINT HELENA, CA 94574**

Site 3 of 17 in cluster A

Actual: 283 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20180615
Handler Name:	JACKSON FAMILY WINES - FREEMARK ABBEY
Handler Address:	3022 ST. HELENA HWY
Handler City,State,Zip:	SAINT HELENA, CA 94574

JACKSON FAMILY WINES - FREEMARK ABBEY (Continued) **1024747043**

EPA ID:	CAC002966815
Contact Name:	MARCUS HARRIS
Contact Address:	7600 ST. HELENA HEY
Contact City,State,Zip:	OAKVILLE, CA 94562
Contact Telephone:	707-948-1955
Contact Fax:	Not reported
Contact Email:	MARCUS.HARRIS@JFWMAIL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	3022 ST. HELENA HWY
Mailing City,State,Zip:	SAINT HELENA, CA 94574
Owner Name:	JACKSON FAMILY WINES
Owner Type:	Other
Operator Name:	MARCUS HARRIS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

JACKSON FAMILY WINES - FREEMARK ABBEY (Continued) **1024747043**

TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20180831
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MARCUS HARRIS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	7600 ST. HELENA HEY
Owner/Operator City,State,Zip:	OAKVILLE, CA 94562
Owner/Operator Telephone:	707-948-1955
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	JACKSON FAMILY WINES
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	3022 ST. HELENA HWY
Owner/Operator City,State,Zip:	SAINT HELENA, CA 94574
Owner/Operator Telephone:	707-948-1949
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20180615
Handler Name:	JACKSON FAMILY WINES - FREEMARK ABBEY
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

JACKSON FAMILY WINES - FREEMARK ABBEY (Continued) **1024747043**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 312130
NAICS Description: WINERIES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A4 **FREEMARK ABBEY WINERY** **CIWQS** **S121639792**
Target **3022 ST. HELENA HWY N** **N/A**
Property **NAPA (County), CA 94574**

Site 4 of 17 in cluster A

Actual:
283 ft.

CIWQS:
Name: FREEMARK ABBEY WINERY
Address: 3022 ST. HELENA HWY N
City,State,Zip: CA 94574
Agency: Freemark Abbey Winery
Agency Address: PO Box 410, Saint Helena, CA 94574
Place/Project Type: Industrial - Wines, Brandy, and Brandy Spirits
SIC/NAICS: 2084
Region: 2
Program: INDSTW
Regulatory Measure Status: Terminated
Regulatory Measure Type: Storm water industrial
Order Number: 2014-0057-DWQ
WDID: 2 28I004316
NPDES Number: CAS000001
Adoption Date: Not reported
Effective Date: 04/06/1992
Termination Date: 06/15/2001
Expiration/Review Date: Not reported
Design Flow: Not reported
Major/Minor: Not reported
Complexity: Not reported
TTWQ: Not reported
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 38.52468
Longitude: -122.49732

Name: FREEMARK ABBEY WINERY
Address: 3022 ST. HELENA HWY N
City,State,Zip: CA 94574
Agency: Legacy Estate
Agency Address: PO Box 410, Saint Helena, CA 94574

FREEMARK ABBEY WINERY (Continued) **S121639792**

Place/Project Type:	Industrial - Wines, Brandy, and Brandy Spirits
SIC/NAICS:	2084
Region:	2
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	2 28I016546
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	05/30/2001
Termination Date:	07/12/2008
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	38.52468
Longitude:	-122.49732

A5 **FREEMARK ABBEY** **CIWQS** **S120029146**
Target **3022 ST HELENA PO BOX 410** **N/A**
Property **SAINT HELENA, CA 94574**

Site 5 of 17 in cluster A

Actual:
283 ft.

CIWQS:

Name:	FREEMARK ABBEY
Address:	3022 ST HELENA PO BOX 410
City,State,Zip:	SAINT HELENA, CA 94574
Agency:	Jackson Family Wines
Agency Address:	425 Aviation Blvd PO Box 410, Santa Rosa, CA 95403
Place/Project Type:	Industrial - Wines, Brandy, and Brandy Spirits
SIC/NAICS:	2084
Region:	2
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	2 28NEC003594
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	06/28/2007
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	38.525097
Longitude:	-122.496217

A6
Target Property
FREEMARK ABBY
3022 ST HELENA HWY
SAINT HELENA, CA 94574

FTTS
HIST FTTS

1009514805
N/A

Site 6 of 17 in cluster A

Actual:
283 ft.

FTTS INSP:

Inspection Number:	199404079004 1
Region:	09
Inspection Date:	04/07/94
Inspector:	RD
Violation occurred:	No
Investigation Type:	EPCRA, Enforcement, SEE Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	EPCRA
Facility Function:	Manufacturer

HIST FTTS INSP:

Inspection Number:	199404079004 1
Region:	09
Inspection Date:	Not reported
Inspector:	RD
Violation occurred:	No
Investigation Type:	EPCRA, Enforcement, SEE Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	EPCRA
Facility Function:	Manufacturer

A7
Target Property
FREEMARK ABBEY WINERY
3022 SAINT HELENA HWY N
SAINT HELENA, CA 94574

FINDS

1016433350
N/A

Site 7 of 17 in cluster A

Actual:
283 ft.

FINDS:

Registry ID: 110055854142

Click Here:

Environmental Interest/Information System:
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A8
Target Property
JACKSON FAMILY WINES - FREEMARK ABBEY
3022 ST. HELENA HWY
SAINT HELENA, CA 94574

HWTS

S124685680
N/A

Site 8 of 17 in cluster A

Actual:
283 ft.

HWTS:

Name:	JACKSON FAMILY WINES - FREEMARK ABBEY
Address:	3022 ST. HELENA HWY
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574
EPA ID:	CAC002966815

JACKSON FAMILY WINES - FREEMARK ABBEY (Continued) **S124685680**

Inactive Date:	09/14/2018
Create Date:	06/15/2018
Last Act Date:	09/15/2018
Mailing Name:	Not reported
Mailing Address:	3022 ST. HELENA HWY
Mailing Address 2:	Not reported
Mailing City,State,Zip:	SAINT HELENA, CA 94574
Owner Name:	JACKSON FAMILY WINES
Owner Address:	3022 ST. HELENA HWY
Owner Address 2:	Not reported
Owner City,State,Zip:	SAINT HELENA, CA 94574
Contact Name:	MARCUS HARRIS
Contact Address:	7600 ST. HELENA HEY
Contact Address 2:	Not reported
City,State,Zip:	OAKVILLE, CA 94562

NAICS:

EPA ID:	CAC002966815
Create Date:	2018-06-15 15:25:58.700
NAICS Code:	312130
NAICS Description:	Wineries
Issued EPA ID Date:	2018-06-15 15:25:58.70000
Inactive Date:	2018-09-14 15:25:58.66700
Facility Name:	JACKSON FAMILY WINES - FREEMARK ABBEY
Facility Address:	3022 ST. HELENA HWY
Facility Address 2:	Not reported
Facility City:	SAINT HELENA
Facility County:	Not reported
Facility State:	CA
Facility Zip:	94574

A9 **MONITORING STATION** **CERS** **S123527558**
Target **3022 ST HELENA HWY** **N/A**
Property **NAPA, CA 94558**

Site 9 of 17 in cluster A

Actual:
283 ft.

CERS:

Name:	MONITORING STATION
Address:	3022 ST HELENA HWY
City,State,Zip:	NAPA, CA 94558
Site ID:	481514
CERS ID:	110020817696
CERS Description:	US EPA Air Emission Inventory System (EIS)

A10 **FREEMARK ABBEY** **FTTS** **1009514804**
Target **3022 ST HELENA** **HIST FTTS** **N/A**
Property **SAINT HELENA, CA 94574**

Site 10 of 17 in cluster A

Actual:
283 ft.

FTTS INSP:

Inspection Number:	199404079004 1
Region:	09
Inspection Date:	04/07/94
Inspector:	RD

FREEMARK ABBEY (Continued) **1009514804**

Violation occurred: No
Investigation Type: EPCRA, Enforcement, SEE Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: EPCRA
Facility Function: User

HIST FTTS INSP:
Inspection Number: 199404079004 1
Region: 09
Inspection Date: Not reported
Inspector: RD
Violation occurred: No
Investigation Type: EPCRA, Enforcement, SEE Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: EPCRA
Facility Function: User

A11 **MONITORING STATION** **FINDS** **1007999609**
Target **3022 ST HELENA HWY** **N/A**
Property **NAPA, CA 94558**

Site 11 of 17 in cluster A

Actual: **283 ft.**

FINDS:
Registry ID: 110020817696

Click Here:

Environmental Interest/Information System:
US EPA Air Quality System (AQS) contains ambient air pollution data collected by EPA, State, Local, and Tribal air pollution control agencies from thousands of monitoring stations.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A12 **FREEMARK ABBEY** **LUST** **S119102569**
Target **3022 N ST. HELENA HWY** **N/A**
Property **ST. HELENA, CA 94574**

Site 12 of 17 in cluster A

Actual: **283 ft.**

NAPA CO. LUST:
Name: FREEMARK ABBEY
Address: 3022 N ST. HELENA HWY
City,State,Zip: ST. HELENA, CA 94574
Permit ID: 248313
Status: Open
Permit Type: Non-LOP
District: 0

A13 **FREEMARK ABBEY WINERY** **WDS** **S106101894**
Target **3022 SAINT HELENA HWY N** **CERS** **N/A**
Property **SAINT HELENA, CA 94574**

Site 13 of 17 in cluster A

Actual:
283 ft.

WDS:

Name:	FREEMARK ABBEY WINERY
Address:	3022 Saint Helena Hwy N
City:	SAINT HELENA
Facility ID:	San Francisco Bay 28I016546
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	7072861542
Facility Contact:	TIM BELL
Agency Name:	LEGACY EST
Agency Address:	PO Box 410
Agency City,St,Zip:	Saint Helena 945740410
Agency Contact:	TED EDWARDS
Agency Telephone:	7079639694
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CERS:

Name:	FREEMARK ABBEY WINERY
Address:	3022 SAINT HELENA HWY N

FREEMARK ABBEY WINERY (Continued) **S106101894**

City,State,Zip: SAINT HELENA, CA 94574
Site ID: 31679
CERS ID: 10171099
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-03-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Napa County Department of Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-06-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Napa County Department of Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Coordinates:
Site ID: 31679
Facility Name: FREEMARK ABBEY WINERY
Env Int Type Code: HMBP
Program ID: 10171099
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.524950
Longitude: -122.497430

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Luke Henderson
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Luke Henderson
Entity Title: Property Maintenance Specialist
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: Jackson Family Wines

FREEMARK ABBEY WINERY (Continued) **S106101894**

Entity Title:	Not reported
Affiliation Address:	421 Aviation Blvd
Affiliation City:	Santa Rosa
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95403
Affiliation Phone:	(707) 544-4000
Affiliation Type Desc:	Parent Corporation
Entity Name:	Freemark Abbey Winery
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	JACKSON FAMILY WINES
Entity Title:	Not reported
Affiliation Address:	421 Aviation Blvd
Affiliation City:	Santa Rosa
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95403
Affiliation Phone:	(707) 544-4000
Affiliation Type Desc:	CUPA District
Entity Name:	Napa County Env Mgmt
Entity Title:	Not reported
Affiliation Address:	1195 Third Street, Suite 210
Affiliation City:	Napa
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94559
Affiliation Phone:	(707) 253-4417
Affiliation Type Desc:	Operator
Entity Name:	Jackson Family Wines
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(707) 544-4000
Affiliation Type Desc:	Environmental Contact
Entity Name:	Gilberto Bravo
Entity Title:	Not reported
Affiliation Address:	PO Box 328
Affiliation City:	Oakville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94562
Affiliation Phone:	Not reported

FREEMARK ABBEY WINERY (Continued) **S106101894**

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 421 Aviation Boulevard
Affiliation City: Santa Rosa
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 95403
Affiliation Phone: Not reported

Affiliation Type Desc: Owner and Operator
Entity Name: Freemark Abbey Winery .. (CWMS member)
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Name: FREEMARK ABBEY WINERY
Address: 3022 SAINT HELENA HWY N
City,State,Zip: SAINT HELENA, CA 94574
Site ID: 31679
CERS ID: 762776
CERS Description: Waste Discharge Requirements

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-03-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Napa County Department of Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-06-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Napa County Department of Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Coordinates:
Site ID: 31679
Facility Name: FREEMARK ABBEY WINERY
Env Int Type Code: HMBP
Program ID: 10171099
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.524950
Longitude: -122.497430

FREEMARK ABBEY WINERY (Continued) **S106101894**

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Luke Henderson
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Luke Henderson
Entity Title:	Property Maintenance Specialist
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	Jackson Family Wines
Entity Title:	Not reported
Affiliation Address:	421 Aviation Blvd
Affiliation City:	Santa Rosa
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95403
Affiliation Phone:	(707) 544-4000

Affiliation Type Desc:	Parent Corporation
Entity Name:	Freemark Abbey Winery
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Property Owner
Entity Name:	JACKSON FAMILY WINES
Entity Title:	Not reported
Affiliation Address:	421 Aviation Blvd
Affiliation City:	Santa Rosa
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95403
Affiliation Phone:	(707) 544-4000

Affiliation Type Desc:	CUPA District
Entity Name:	Napa County Env Mgmt
Entity Title:	Not reported
Affiliation Address:	1195 Third Street, Suite 210
Affiliation City:	Napa
Affiliation State:	CA

FREEMARK ABBEY WINERY (Continued) **S106101894**

Affiliation Country: Not reported
Affiliation Zip: 94559
Affiliation Phone: (707) 253-4417

Affiliation Type Desc: Operator
Entity Name: Jackson Family Wines
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (707) 544-4000

Affiliation Type Desc: Environmental Contact
Entity Name: Gilberto Bravo
Entity Title: Not reported
Affiliation Address: PO Box 328
Affiliation City: Oakville
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94562
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 421 Aviation Boulevard
Affiliation City: Santa Rosa
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 95403
Affiliation Phone: Not reported

Affiliation Type Desc: Owner and Operator
Entity Name: Freemark Abbey Winery .. (CWMS member)
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

A14 **FREEMARK ABBEY** **NPDES S109444004**
Target **3022 ST HELENA** **CERS N/A**
Property **SAINT HELENA, CA 94574**

Site 14 of 17 in cluster A

Actual:
283 ft.

NPDES:
Name: FREEMARK ABBEY
Address: 3022 ST HELENA
City,State,Zip: SAINT HELENA, CA 94574
Facility Status: Not reported
NPDES Number: Not reported
Region: Not reported

FREEMARK ABBEY (Continued) **S109444004**

Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 28NEC003594
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	09/21/2017
Operator Name:	Jackson Family Wines
Operator Address:	425 Aviation Blvd
Operator City:	Santa Rosa
Operator State:	California
Operator Zip:	95403

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	326426
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 28NEC003594
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/28/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Jackson Family Wines
Discharge Address:	425 Aviation Blvd
Discharge City:	Santa Rosa
Discharge State:	California
Discharge Zip:	95403
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported

FREEMARK ABBEY (Continued) **S109444004**

Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	FREEMARK ABBEY
Address:	3022 ST HELENA
City,State,Zip:	SAINT HELENA, CA 94574
Facility Status:	Active
NPDES Number:	CAS000001
Region:	2
Agency Number:	0
Regulatory Measure ID:	326426
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	2 28NEC003594
Regulatory Measure Type:	Enrollee
Program Type:	Industrial

FREEMARK ABBEY (Continued) **S109444004**

Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/28/2007
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	425 Aviation Blvd
Discharge Name:	Jackson Family Wines
Discharge City:	Santa Rosa
Discharge State:	California
Discharge Zip:	95403
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	326426
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 28NEC003594
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/28/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Jackson Family Wines
Discharge Address:	425 Aviation Blvd
Discharge City:	Santa Rosa
Discharge State:	California
Discharge Zip:	95403
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported

FREEMARK ABBEY (Continued) **S109444004**

Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CERS:

Name:	FREEMARK ABBEY
Address:	3022 ST HELENA
City,State,Zip:	SAINT HELENA, CA 94574
Site ID:	532355
CERS ID:	651464
CERS Description:	Industrial Facility Storm Water

Affiliation:

Affiliation Type Desc:	Owner/Operator
Entity Name:	Jackson Family Wines
Entity Title:	Operator
Affiliation Address:	425 Aviation BlvdPO Box 410
Affiliation City:	Santa Rosa
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95403
Affiliation Phone:	Not reported

A15 **FREEMARK ABBY WINERY** **HAZNET** **S112941262**
Target **3022 N SAINT HELENA HWY** **HWTS** **N/A**
Property **SAINT HELENA, CA 94574**

Site 15 of 17 in cluster A

Actual:
283 ft.

HAZNET:

Name:	FREEMARK ABBY WINERY
Address:	3022 N SAINT HELENA HWY
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574
Contact:	TIM HORVATH
Telephone:	7079633994
Mailing Name:	Not reported
Mailing Address:	3022 N SAINT HELENA HWY
Year:	2004
Gepaid:	CAC002583474
TSD EPA ID:	CAD008364432
CA Waste Code:	331 - Off-specification, aged or surplus organics
Disposal Method:	H01 - Transfer Station
Tons:	0.0231
Year:	2004
Gepaid:	CAC002583474
TSD EPA ID:	CAD008364432
CA Waste Code:	141 - Off-specification, aged or surplus inorganics
Disposal Method:	H01 - Transfer Station
Tons:	0.01751

Additional Info:

Year:	2004
Gen EPA ID:	CAC002583474
Shipment Date:	20041103
Creation Date:	1/20/2005 18:30:18
Receipt Date:	20041110
Manifest ID:	24045964
Trans EPA ID:	CAR000047613
Trans Name:	CAL WEST ENVIRONMENTAL SVCS INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO-CHEM CORPORATION
TSDF Alt EPA ID:	CAD008364432
TSDF Alt Name:	Not reported
Waste Code Description:	141 - Off-specification, aged, or surplus inorganics
RCRA Code:	D009
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.005
Waste Quantity:	10
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

FREEMARK ABBY WINERY (Continued) **S112941262**

Shipment Date:	20041103
Creation Date:	1/20/2005 18:30:18
Receipt Date:	20041110
Manifest ID:	24045964
Trans EPA ID:	CAR000047613
Trans Name:	CAL WEST ENVIRONMENTAL SVCS INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO-CHEM CORPORATION
TSDF Alt EPA ID:	CAD008364432
TSDF Alt Name:	Not reported
Waste Code Description:	141 - Off-specification, aged, or surplus inorganics
RCRA Code:	D002
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.01251
Waste Quantity:	3
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20041103
Creation Date:	1/20/2005 18:30:18
Receipt Date:	20041110
Manifest ID:	24045964
Trans EPA ID:	CAR000047613
Trans Name:	CAL WEST ENVIRONMENTAL SVCS INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO-CHEM CORPORATION
TSDF Alt EPA ID:	CAD008364432
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0231
Waste Quantity:	7
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

HWTS:

Name:	FREEMARK ABBY WINERY
Address:	3022 N SAINT HELENA HWY
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574
EPA ID:	CAC002583474
Inactive Date:	06/21/2005
Create Date:	10/28/2004
Last Act Date:	06/21/2005

FREEMARK ABBY WINERY (Continued) **S112941262**

Mailing Name:	Not reported
Mailing Address:	3022 N SAINT HELENA HWY
Mailing Address 2:	Not reported
Mailing City,State,Zip:	SAINT HELENA, CA 94574
Owner Name:	FREEMART ABBY WINERY
Owner Address:	3022 N SAINT HELENA HWY
Owner Address 2:	Not reported
Owner City,State,Zip:	SAINT HELENA, CA 94574
Contact Name:	TIM HORVATH
Contact Address:	3022 N SAINT HELENA HWY
Contact Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 94574

A16 **FREEMARK ABBY WINERY INC** **HAZNET** **S112970757**
Target **3022 SAINT HELENA HWY N** **HWTS** **N/A**
Property **SAINT HELENA, CA 94574**

Site 16 of 17 in cluster A

Actual: **283 ft.**

HAZNET:

Name:	FREEMARK ABBY WINERY INC
Address:	3022 SAINT HELENA HWY N
Address 2:	Not reported
City,State,Zip:	SAINT HELENA, CA 945749652
Contact:	MICHAEL IMBRIANI
Telephone:	7078362019
Mailing Name:	Not reported
Mailing Address:	1190 KITTYHAWK BLVD
Year:	2008
Gepaid:	CAC002631202
TSD EPA ID:	CAD982042475
CA Waste Code:	151 - Asbestos containing waste
Disposal Method:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.8

Additional Info:

Year:	2008
Gen EPA ID:	CAC002631202
Shipment Date:	20080618
Creation Date:	8/11/2008 18:30:08
Receipt Date:	20080618
Manifest ID:	003715870JJK
Trans EPA ID:	CAD982435596
Trans Name:	NORTHERN ABATEMENT CO INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD982042475
Trans Name:	NWS HAY ROAD LANDFILL
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	151 - Asbestos-containing waste
RCRA Code:	Not reported
Meth Code:	H132 - Landfill Or Surface Impoundment That Will Be Closed As

FREEMARK ABBY WINERY INC (Continued) **S112970757**

Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons: 0.8
Waste Quantity: 2
Quantity Unit: Y
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

HWTS:
Name: FREEMARK ABBY WINERY INC
Address: 3022 SAINT HELENA HWY N
Address 2: Not reported
City,State,Zip: SAINT HELENA, CA 945749652
EPA ID: CAC002631202
Inactive Date: 12/07/2008
Create Date: 06/09/2008
Last Act Date: 12/16/2008
Mailing Name: C/O JACKSON FAMILY WINES
Mailing Address: 1190 KITTYHAWK BLVD
Mailing Address 2: Not reported
Mailing City,State,Zip: SANTA ROSA, CA 954031013
Owner Name: FREEMARK ABBY WINERY INC
Owner Address: 3022 SAINT HELENA HWY N
Owner Address 2: Not reported
Owner City,State,Zip: SAINT HELENA, CA 945749652
Contact Name: MICHAEL IMBRIANI
Contact Address: 1190 KITTYHAWK BLVD
Contact Address 2: Not reported
City,State,Zip: SANTA ROSA, CA 954031013

A17 **FREEMARK ABBEY** **FINDS 1023693341**
Target **3022 ST HELENA** **ECHO N/A**
Property **SAINT HELENA, CA 94574**

Site 17 of 17 in cluster A

Actual:
283 ft.

FINDS:
Registry ID: 110070090389

Click Here:

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1023693341

FREEMARK ABBEY (Continued) **1023693341**

Registry ID: 110070090389
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070090389
Name: FREEMARK ABBEY
Address: 3022 ST HELENA
City,State,Zip: SAINT HELENA, CA 94574

18
WNW
< 1/8
0.014 mi.
72 ft.

BUCKHORN TRAILER PARK **UST** **U003114978**
3043 ST HELENA HWY **N/A**
ST HELENA, CA

Relative:
Higher

Actual:
314 ft.

NAPA CO. UST:
Name: BUCKHORN TRAILER PARK
Address: 3043 ST HELENA HWY
City,State,Zip: ST HELENA
Facility ID: NAPA0388
Permit ID: Not reported
Facility Status: Not reported
Permit Type: Not reported
District: Not reported
Num of Tanks: 0

B19
SE
< 1/8
0.094 mi.
494 ft.

FRED A. BERTOLINI **SWEEPS UST** **S106926430**
1181 YORK LN **N/A**
SAINT HELENA, CA 94574

Site 1 of 2 in cluster B

Relative:
Lower

Actual:
240 ft.

SWEEPS UST:
Name: FRED A. BERTOLINI
Address: 1181 YORK LN
City: SAINT HELENA
Status: Active
Comp Number: 40459
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: 1
SWRCB Tank Id: 28-000-040459-000001
Tank Status: A
Capacity: 500
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: 1

B20 **FRED A BERTOLINI** **HIST UST** **U001598296**
SE **1181 YORK LANE** **N/A**
< 1/8 **ST HELENA, CA 94574**
0.094 mi.
494 ft. **Site 2 of 2 in cluster B**

Relative: HIST UST:
Lower

Actual:
240 ft.

Name:	FRED A BERTOLINI
Address:	1181 YORK LANE
City,State,Zip:	ST HELENA, CA 94574
File Number:	0002AF13
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002AF13.pdf
Region:	STATE
Facility ID:	00000040459
Facility Type:	Other
Other Type:	RESIDENCE
Contact Name:	Not reported
Telephone:	7079632578
Owner Name:	FRED A. BERTOLINI
Owner Address:	1181 YORK LANE
Owner City,St,Zip:	ST. HELENA, CA 94574
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

C21 **DUCKHORN VINEYARDS** **LUST** **U001598284**
ENE **3027 SILVERADO TRL** **HIST UST** **N/A**
1/4-1/2 **ST HELENA, CA 94574** **CERS**
0.389 mi.
2054 ft. **Site 1 of 3 in cluster C**

Relative: LUST:
Lower

Actual:
241 ft.

Name:	DUCKHORN VINEYARDS
Address:	3027 SILVERADO TRL
City,State,Zip:	ST HELENA, CA 94574
Lead Agency:	NAPA COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605500053
Global Id:	T0605500053
Latitude:	38.5273417
Longitude:	-122.4841258
Status:	Completed - Case Closed
Status Date:	07/20/1993
Case Worker:	ZZZ
RB Case Number:	28-0055
Local Agency:	NAPA COUNTY
File Location:	Not reported
Local Case Number:	0302
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

DUCKHORN VINEYARDS (Continued) **U001598284**

LUST:
Global Id: T0605500053
Contact Type: Local Agency Caseworker
Contact Name: UST CASE WORKER
Organization Name: NAPA COUNTY
Address: 1195 THIRD ST., ROOM 101
City: NAPA
Email: Not reported
Phone Number: 7072534269

LUST:
Global Id: T0605500053
Action Type: Other
Date: 04/10/1989
Action: Leak Discovery

Global Id: T0605500053
Action Type: ENFORCEMENT
Date: 10/05/1989
Action: * Historical Enforcement

Global Id: T0605500053
Action Type: Other
Date: 04/10/1989
Action: Leak Stopped

Global Id: T0605500053
Action Type: Other
Date: 04/11/1989
Action: Leak Reported

LUST:
Global Id: T0605500053
Status: Open - Case Begin Date
Status Date: 04/11/1988

Global Id: T0605500053
Status: Open - Site Assessment
Status Date: 04/11/1988

Global Id: T0605500053
Status: Open - Site Assessment
Status Date: 12/12/1990

Global Id: T0605500053
Status: Open - Site Assessment
Status Date: 03/11/1991

Global Id: T0605500053
Status: Completed - Case Closed
Status Date: 07/20/1993

HIST UST:
Name: DUCKHORN VINEYARDS

DUCKHORN VINEYARDS (Continued) **U001598284**

Address:	3027 SILVERADO TRAIL
City,State,Zip:	ST HELENA, CA 94574
File Number:	0001EFDC
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001EFDC.pdf
Region:	STATE
Facility ID:	00000028995
Facility Type:	Other
Other Type:	Not reported
Contact Name:	TOM RINALDI
Telephone:	7079637108
Owner Name:	ST. HELENA WINE COMPANY
Owner Address:	3027 SILVERADO TRAIL
Owner City,St,Zip:	ST. HELENA, CA 94574
Total Tanks:	0002
Tank Num:	001
Container Num:	2
Year Installed:	1972
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Not reported
Tank Num:	002
Container Num:	1
Year Installed:	1972
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

CERS:

Name:	DUCKHORN VINEYARDS
Address:	3027 SILVERADO TRL
City,State,Zip:	ST HELENA, CA 94574
Site ID:	194107
CERS ID:	T0605500053
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	UST CASE WORKER - NAPA COUNTY
Entity Title:	Not reported
Affiliation Address:	1195 THIRD ST., ROOM 101
Affiliation City:	NAPA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	7072534269

C22 **DUCKHORN VINEYARDS** **LUST** **S104162280**
ENE **3027 SILVERADO TRL** **Cortese** **N/A**
1/4-1/2 **ST HELENA, CA 94574**
0.389 mi.
2054 ft. **Site 2 of 3 in cluster C**

Relative:
Lower

Actual:
241 ft.

LUST REG 2:

Region:	2
Facility Id:	28-0055
Facility Status:	Case Closed
Case Number:	0302
How Discovered:	Tank Closure
Leak Cause:	Structure Failure
Leak Source:	Tank
Date Leak Confirmed:	4/11/1988
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	12/12/1990
Preliminary Site Assesment Began:	3/11/1991
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

CORTESE:

Name:	DUCKHORN VINEYARDS
Address:	3027 SILVERADO TRL
City,State,Zip:	ST HELENA, CA 94574
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0605500053
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

C23 **DUCKHORN VINEYARDS** **SWEEPS UST** **S105025999**
ENE **3027 SILVERADO TRL** **HIST CORTESE** **N/A**
1/4-1/2 **SAINT HELENA, CA 94574**
0.389 mi.
2054 ft. **Site 3 of 3 in cluster C**

Relative:
Lower

Actual:
241 ft.

SWEEPS UST:

Name:	DUCKHORN VINEYARDS
Address:	3027 SILVERADO TRL
City:	SAINT HELENA

DUCKHORN VINEYARDS (Continued) **S105025999**

Status: Not reported
Comp Number: 28995
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 28-000-028995-000001
Tank Status: Not reported
Capacity: 1
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: 2

Name: DUCKHORN VINEYARDS
Address: 3027 SILVERADO TRL
City: SAINT HELENA
Status: Not reported
Comp Number: 28995
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 28-000-028995-000002
Tank Status: Not reported
Capacity: 5000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: LEADED
Number Of Tanks: Not reported

HIST CORTESE:
edr_fname: DUCKHORN VINEYARDS
edr_fadd1: 3027 SILVERADO TRL
City,State,Zip: SAINT HELENA, CA 94574
Region: CORTESE
Facility County Code: 28
Reg By: LTNKA
Reg Id: 28-0055

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 07/12/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 77

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/23/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/23/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/14/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 61

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/09/2021
Date Data Arrived at EDR: 08/10/2021
Date Made Active in Reports: 11/05/2021
Number of Days to Update: 87

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 05/20/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/30/2021
Number of Days to Update: 87

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/13/2021
Number of Days to Update: 88

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 10/28/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 12/01/2019
Date Data Arrived at EDR: 08/19/2021
Date Made Active in Reports: 10/28/2021
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 08/19/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 10/31/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84
Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/12/2021
Date Data Arrived at EDR: 09/13/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 15
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/13/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83
Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/17/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 66

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/19/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 85

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/20/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/05/2021
Number of Days to Update: 50
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/11/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 61
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/03/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/27/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 2

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/12/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2021
Date Data Arrived at EDR: 05/25/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 78

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 62

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/26/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 70
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 08/18/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/16/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/04/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/05/2021
Number of Days to Update: 84

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/01/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 06/07/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 81

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 08/12/2021
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 84
Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55
Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/22/2021
Number of Days to Update: 84

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 42

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 07/02/2021
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/11/2021
Number of Days to Update: 83

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 07/23/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 77

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/09/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 56

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 6

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/08/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory

A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 5

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 11

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 04/07/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 06/06/3021
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/23/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 1

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/28/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/29/2021
Date Made Active in Reports: 10/19/2021
Number of Days to Update: 82

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 09/28/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 11/02/2021
Number of Days to Update: 90
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 10/31/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/11/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 89

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/04/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/22/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/12/2021
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/17/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 78

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 07/14/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 81

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 80

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/22/2021
Date Data Arrived at EDR: 06/28/2021
Date Made Active in Reports: 09/21/2021
Number of Days to Update: 85

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 80

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/23/2021
Date Data Arrived at EDR: 08/10/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 90

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/12/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/12/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FREEMARK ABBEY WINERY - ALUMBAUGH PROPERTY
3000-3022 SAINT HELENA HWY N
SAINT HELENA, CA 94574

TARGET PROPERTY COORDINATES

Latitude (North):	38.524794 - 38° 31' 29.26''
Longitude (West):	122.496369 - 122° 29' 46.93''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	543901.8
UTM Y (Meters):	4263958.0
Elevation:	283 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12008179 SAINT HELENA, CA
Version Date:	2018
Northwest Map:	12008095 CALISTOGA, CA
Version Date:	2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

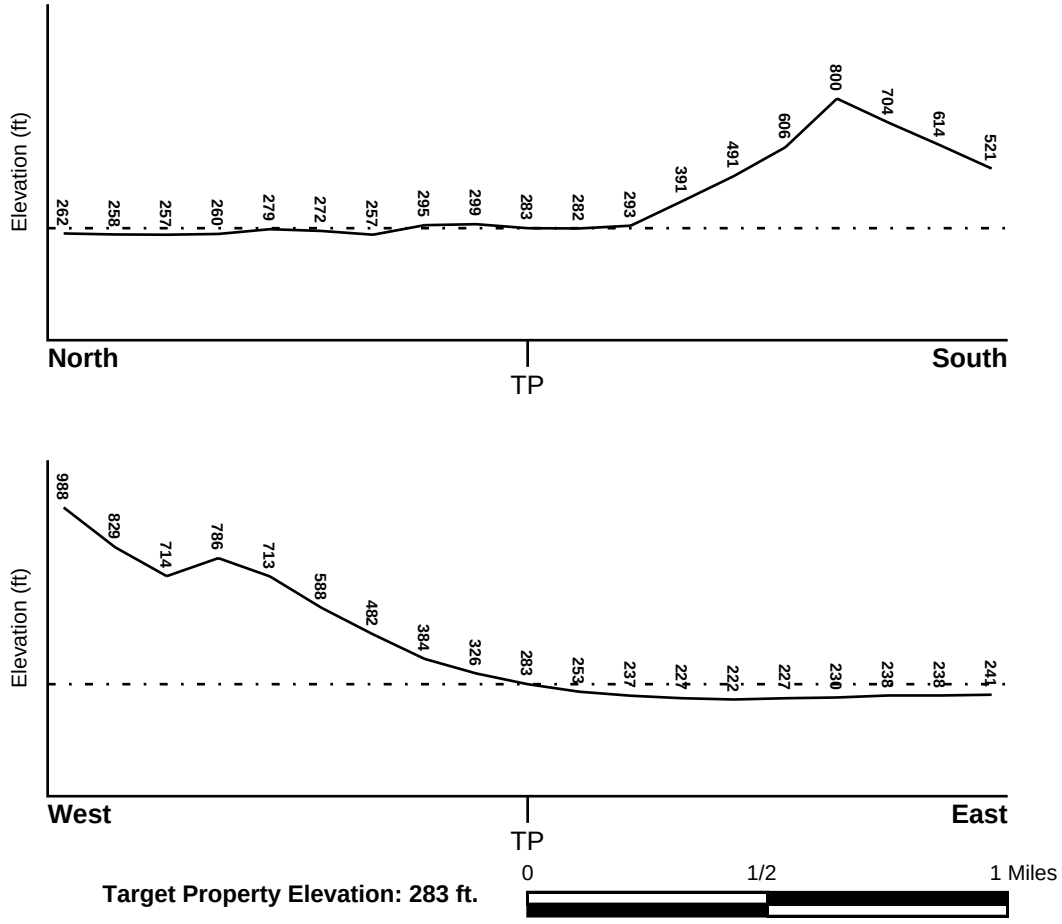
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06055C0263E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06055C0265E	FEMA FIRM Flood data
06097C0625E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SAINT HELENA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

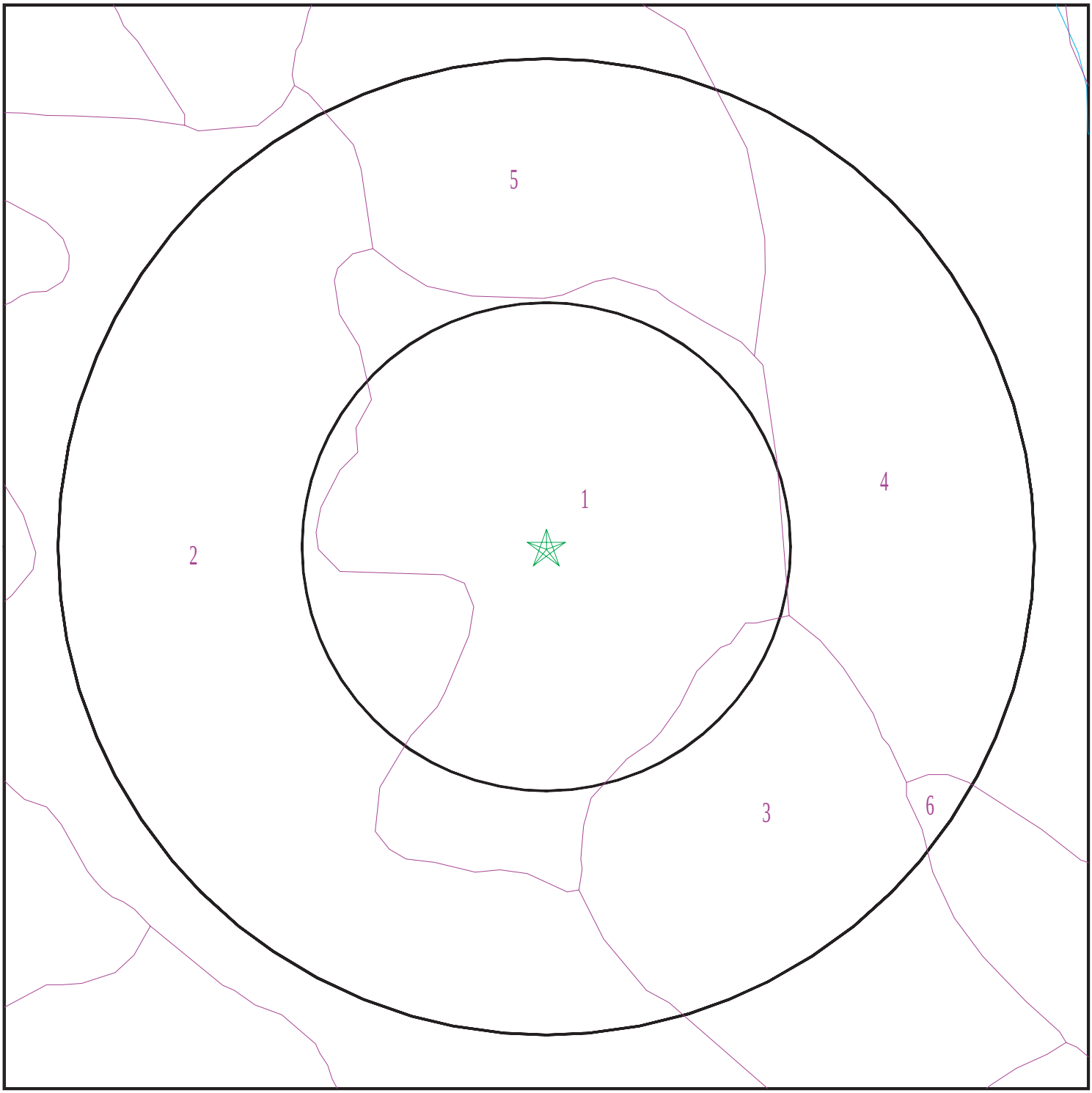
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene volcanic rocks
Code:	Tpv *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Volcanic Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6753600.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Freemark Abbey Winery - Alumbaugh Property	CLIENT:	Environmental Risk Assessors
ADDRESS:	3000-3022 Saint Helena Hwy N Saint Helena CA 94574	CONTACT:	Lita Freeman
LAT/LONG:	38.524794 / 122.496369	INQUIRY #:	6753600.2s
		DATE:	November 17, 2021 9:07 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: PERKINS

Soil Surface Texture: gravelly loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	29 inches	gravelly loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 1.4 Min: 0.42	Max: 7.3 Min: 6.1
2	29 inches	59 inches	gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 1.4 Min: 0.42	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: AIKEN

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	7 inches	14 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	14 inches	44 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
4	44 inches	48 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 3

Soil Component Name: PERKINS

Soil Surface Texture: gravelly loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	29 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 1.4 Min: 0.42	Max: 7.3 Min: 5.1
2	29 inches	59 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 1.4 Min: 0.42	Max: 7.3 Min: 5.1

Soil Map ID: 4

Soil Component Name: BALE

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 153 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	24 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	24 inches	59 inches	stratified gravelly sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6

Soil Map ID: 5

Soil Component Name: Hambright

Soil Surface Texture: very stony loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 38 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	very stony loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 141 Min: 0.07	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	11 inches	16 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 141 Min: 0.07	Max: Min:

Soil Map ID: 6

Soil Component Name: COLE

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
2	7 inches	64 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
C9	USGS40000188855	1/4 - 1/2 Mile NW
11	USGS40000188813	1/4 - 1/2 Mile ESE
F20	USGS40000188919	1/2 - 1 Mile North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

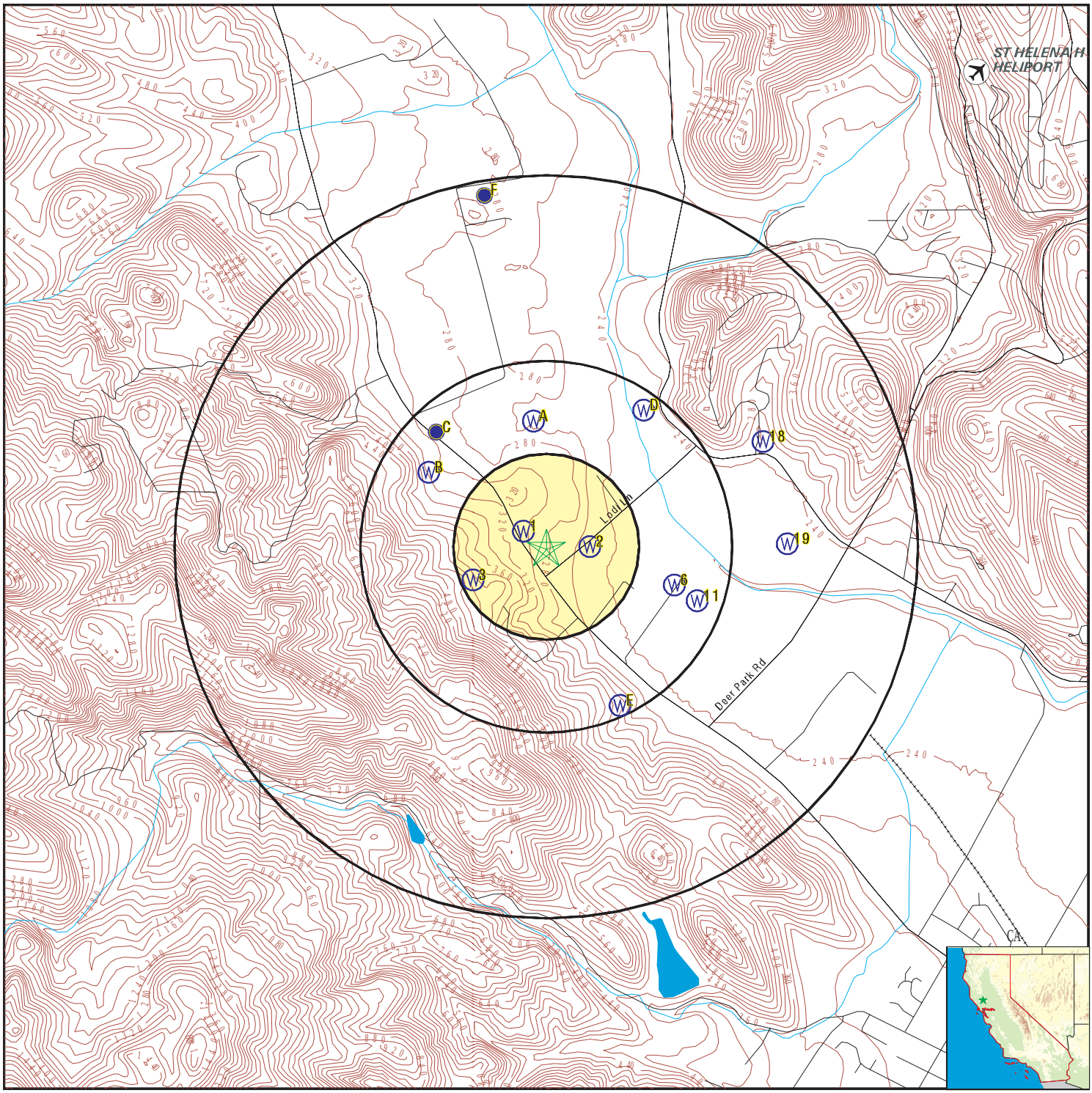
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CADDW0000011617	0 - 1/8 Mile NW
2	CADDW0000005745	0 - 1/8 Mile East
3	CADWR9000039555	1/8 - 1/4 Mile WSW
A4	CADDW0000006824	1/4 - 1/2 Mile North
A5	CADDW0000016788	1/4 - 1/2 Mile North
6	CADWR9000039554	1/4 - 1/2 Mile ESE
B7	CADDW0000008788	1/4 - 1/2 Mile WNW
B8	CADDW0000012209	1/4 - 1/2 Mile WNW
C10	CADWR9000039571	1/4 - 1/2 Mile NW
D12	CADDW0000022608	1/4 - 1/2 Mile NE
D13	CAUSGSN00016575	1/4 - 1/2 Mile NE
D14	CAUSGS000000200	1/4 - 1/2 Mile NE
D15	CALLNL000000942	1/4 - 1/2 Mile NE
E16	CADDW0000008168	1/4 - 1/2 Mile SSE
E17	CADDW0000005855	1/4 - 1/2 Mile SSE
18	CADDW0000009601	1/2 - 1 Mile ENE
19	8368	1/2 - 1 Mile East
F21	CADWR9000039603	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 6753600.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Freemark Abbey Winery - Alumbaugh Property	CLIENT:	Environmental Risk Assessors
ADDRESS:	3000-3022 Saint Helena Hwy N Saint Helena CA 94574	CONTACT:	Lita Freeman
LAT/LONG:	38.524794 / 122.496369	INQUIRY #:	6753600.2s
		DATE:	November 17, 2021 9:07 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
NW
0 - 1/8 Mile
Higher

CA WELLS **CADDW0000011617**

Well ID:	2800561-002	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL #2	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800561-002&store_num=		
GeoTracker Data:	Not Reported		

2
East
0 - 1/8 Mile
Lower

CA WELLS **CADDW0000005745**

Well ID:	2802715-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2802715-001&store_num=		
GeoTracker Data:	Not Reported		

3
WSW
1/8 - 1/4 Mile
Lower

CA WELLS **CADWR9000039555**

State Well #:	Not Reported	Station ID:	50645
Well Name:	213	Basin Name:	Not Reported
Well Use:	Residential	Well Type:	Single Well
Well Depth:	340	Well Completion Rpt #:	384991

A4
North
1/4 - 1/2 Mile
Lower

CA WELLS **CADDW0000006824**

Well ID:	2800030-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 001	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800030-001&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A5
North
1/4 - 1/2 Mile
Lower

CA WELLS **CADDW0000016788**

Well ID:	2800026-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 001	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800026-001&store_num=		
GeoTracker Data:	Not Reported		

6
ESE
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR9000039554**

State Well #:	08N06W26B004M	Station ID:	30671
Well Name:	Not Reported	Basin Name:	Napa Valley
Well Use:	Irrigation	Well Type:	Unknown
Well Depth:	280	Well Completion Rpt #:	18119

B7
WNW
1/4 - 1/2 Mile
Higher

CA WELLS **CADDW0000008788**

Well ID:	2800749-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LPA REPORTED PRIMARY SOURCE		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800749-001&store_num=		
GeoTracker Data:	Not Reported		

B8
WNW
1/4 - 1/2 Mile
Higher

CA WELLS **CADDW0000012209**

Well ID:	2800741-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LPA REPORTED PRIMARY SOURCE		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800741-001&store_num=		
GeoTracker Data:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C9
NW
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS40000188855**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	008N006W23M001M	Type:	Well
Description:	Not Reported	HUC:	18050002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	113
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	27	Level reading date:	1977-10-06
Feet below surface:	33.4	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1977-06-27	Feet below surface:	41.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-04-21	Feet below surface:	23.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-28	Feet below surface:	26.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-04	Feet below surface:	39.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-03	Feet below surface:	18.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-04	Feet below surface:	11.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	18.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-18	Feet below surface:	13.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-28	Feet below surface:	5.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-16	Feet below surface:	40.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-31	Feet below surface:	10.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-13	Feet below surface:	15.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-25	Feet below surface:	14.2
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1973-05-31	Feet below surface:	12.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-20	Feet below surface:	12.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-03	Feet below surface:	8.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-17	Feet below surface:	3.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-27	Feet below surface:	5.4
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-27	Feet below surface:	4.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-21	Feet below surface:	4.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-05-09	Feet below surface:	4.9
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-04-20	Feet below surface:	8.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-03-25	Feet below surface:	8.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-04-07	Feet below surface:	9.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-11-10	Feet below surface:	3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-07-19	Feet below surface:	56.9
Feet to sea level:	Not Reported	Note:	Not Reported

C10
NW
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR9000039571**

State Well #:	08N06W23M001M	Station ID:	37522
Well Name:	Not Reported	Basin Name:	Napa Valley
Well Use:	Residential	Well Type:	Unknown
Well Depth:	113	Well Completion Rpt #:	Not Reported

11
ESE
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000188813**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	008N006W26B004M	Type:	Well
Description:	Not Reported	HUC:	18050002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported

Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	9	Level reading date:	1983-10-13
Feet below surface:	12.6	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1983-04-08	Feet below surface:	3.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-10-20	Feet below surface:	13.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-03-26	Feet below surface:	6.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-10-16	Feet below surface:	14.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-09-16	Feet below surface:	12.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-03-27	Feet below surface:	8.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-10-01	Feet below surface:	26.0
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-04-12	Feet below surface:	8.0
Feet to sea level:	Not Reported	Note:	Not Reported

D12
NE
1/4 - 1/2 Mile
Lower

CA WELLS **CADDW0000022608**

Well ID:	2800024-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 1	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800024-001&store_num=		
GeoTracker Data:	Not Reported		

D13
NE
1/4 - 1/2 Mile
Lower

CA WELLS **CAUSGSN00016575**

Well ID:	USGS-383148122292901	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-383148122292901	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-383148122292901&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D14
NE
1/4 - 1/2 Mile
Lower

CA WELLS **CAUSGS000000200**

D15
NE
1/4 - 1/2 Mile
Lower

CA WELLS **CALLNL000000942**

Well ID:	102233	Well Type:	MUNICIPAL
Source:	Lawrence Livermore National Laboratory		
Other Name:	08N/06W-23K01 M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	Not Reported		
GeoTracker Data:	Not Reported		

Chemical:	Helium-4	Results:	.00000011172
Units:	cm3STP/g	Date:	01/04/2005

Chemical:	Krypton	Results:	.0000000824188
Units:	cm3STP/g	Date:	01/04/2005

Chemical:	Tritium (Hydrogen 3)	Results:	2.03
Units:	pCi/L	Date:	02/22/2005

Chemical:	Argon	Results:	.000363603
Units:	cm3STP/g	Date:	01/04/2005

Chemical:	Helium-3/Helium-4	Results:	.0000016486
Units:	atom ratio	Date:	01/04/2005

Chemical:	Xenon	Results:	.0000000112718
Units:	cm3STP/g	Date:	01/04/2005

Chemical:	Neon	Results:	.000000226224
Units:	cm3STP/g	Date:	01/04/2005

E16
SSE
1/4 - 1/2 Mile
Higher

CA WELLS **CADDW0000008168**

Well ID:	2801036-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LPA REPORTED PRIMARY SOURCE/MT. DIAMOND		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2801036-001&store_num=		
GeoTracker Data:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E17
SSE
1/4 - 1/2 Mile
Higher

CA WELLS **CADDW0000005855**

Well ID:	2801045-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LPA REPORTED PRIMARY SOURCE		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2801045-001&store_num=		
GeoTracker Data:	Not Reported		

18
ENE
1/2 - 1 Mile
Lower

CA WELLS **CADDW0000009601**

Well ID:	2800532-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 01	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=2800532-001&store_num=		
GeoTracker Data:	Not Reported		

19
East
1/2 - 1 Mile
Lower

CA WELLS **8368**

Seq:	8368	Prim sta c:	08N/06W-23J03 M
Frds no:	2800532001	County:	28
District:	58	User id:	28C
System no:	2800532	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	383130.0	Longitude:	1222900.0
Precision:	4	Status:	AR
Comment 1:	BOURNEMOUTH RD AND SILVERADO TRAIL ST HELENA		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	2800532	System nam:	Vailima Estates Mwc
Hqname:	Not Reported	Address:	Not Reported
City:	NAPA	State:	CA
Zip:	95444	Zip ext:	Not Reported
Pop serv:	100	Connection:	1
Area serve:	Not Reported		
Sample date:	05-AUG-15	Finding:	10.4
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	3.8
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		

Sample date:	05-AUG-15	Finding:	4.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	05-AUG-15	Finding:	200.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	4.9
Chemical:	CHROMIUM (TOTAL)	Report units:	UG/L
Dlr:	10.		
Sample date:	05-AUG-15	Finding:	0.45
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	05-AUG-15	Finding:	2.4
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	05-AUG-15	Finding:	5.6
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	23.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	6.4
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	6.2
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	42.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	120.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	96.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	7.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	200.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	05-AUG-15	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	26-NOV-14	Finding:	5.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

Dlr:	2.		
Sample date:	28-AUG-13	Finding:	4.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	15-AUG-12	Finding:	2.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	15-AUG-12	Finding:	200.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	2.5
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	15-AUG-12	Finding:	5.4
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	22.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	6.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	5.3
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	38.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	94.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	7.1
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	220.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	15-AUG-12	Finding:	4.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	15-AUG-12	Finding:	0.17
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		

Sample date:	15-AUG-12	Finding:	3.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		

Sample date:	15-AUG-12	Finding:	0.39
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		

F20
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000188919**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	008N006W14N001M	Type:	Well
Description:	Not Reported	HUC:	18050002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	162
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	27	Level reading date:	1977-10-06
Feet below surface:	21.7	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1977-06-27	Feet below surface:	25
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1977-04-21	Feet below surface:	29.5
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1977-01-28	Feet below surface:	19.5
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-11-17	Feet below surface:	21.2
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-08-04	Feet below surface:	23
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-05-03	Feet below surface:	17
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-02-04	Feet below surface:	19
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-07-14	Feet below surface:	17.5
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-04-28	Feet below surface:	13.5
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1974-10-16	Feet below surface:	21
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1974-07-31	Feet below surface:	18.5

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-13	Feet below surface:	6.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-05	Feet below surface:	19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-25	Feet below surface:	21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-31	Feet below surface:	15.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-20	Feet below surface:	23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-03	Feet below surface:	12.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-28	Feet below surface:	10.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-31	Feet below surface:	11.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-27	Feet below surface:	10.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-21	Feet below surface:	10.2
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-05-09	Feet below surface:	9.1
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-04-20	Feet below surface:	11.3
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-03-25	Feet below surface:	11.5
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-04-07	Feet below surface:	17.6
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-04-10	Feet below surface:	9.2
Feet to sea level:	Not Reported	Note:	Not Reported

F21
NNW
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000039603**

State Well #:	08N06W14N001M	Station ID:	21723
Well Name:	Not Reported	Basin Name:	Napa Valley
Well Use:	Residential	Well Type:	Unknown
Well Depth:	162	Well Completion Rpt #:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94574	16	4

Federal EPA Radon Zone for NAPA County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 94574

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.800 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.