“G”

Biological Resources Studies

Page 2	Biological Report – August 11, 2021
Page 9	Updated Biological Report – November 5, 2023
Page 18	Northern Spotted Owl Assessment – July 28, 2021

Forest Ecosystem Management, pllc

1692 East Road * Deary, ID 83823

(406) 490-7427 * Pamtown30@gmail.com

In Cooperation with:

Salix Natural Resource Management

PO Box 684 * Ukiah, CA 95482

(530) 913-0490 * heatherkamille@comcast.net

August 11, 2021

RE: Arrow & Branch Winery (P21-00087)

This is in response to Napa County Planning, Building & Environmental Services' Application status letter dated May 19, 2021 for the Arrow & Branch Winery (Formerly Ideology) listed as P21-00087. The County was requesting clarification to: "Confirm that the proposed physical improvements will not impact nearby riparian woodland or sensitive biotic vegetation."

Arrow & Branch Winery General Information

Project Location: nkn Solano Avenue; Napa, California (Attachment #1)
Legal of Project Area: Portions of Section 18, T06N, R04W MDB&M
APN: 034-190-040-000
County: Napa County
Proposed Project: Building a Winery including structure, parking area, driveway, and landscaping within an existing vineyard.

Property Description: The Arrow & Branch Winery Project is located off Solano Avenue, which travels parallel to St Helena Highway (HWY 29) in Oak Knoll, California. A portion of the parcel boundary is Dry Creek on the northern end, with agricultural land surrounding the remaining parcel boundaries (Attachment #2). Vineyards is the primary agricultural product. The northern side of Dry Creek is Urban and includes houses, wineries, and commercial properties. There is a strip of trees/shrubs approximately 100' to 250' wide along Dry Creek throughout this area.

The vegetation types described by CDFW within ¼ mile of the Project Area includes a strip of Mixed Riparian Hardwoods along Dry Creek, Urban, and Agricultural (Vineyards); with a small amount of Annual Grasses and Forbes, and Valley Oak to the east (Attachment #3). Mixed Riparian Hardwoods

(CalVeg Classification) or Montane Riparian Zones (CWHR Type) is often quite variable and often structurally diverse. Usually, the montane riparian zone occurs as a narrow, often dense grove of broad-leaved, winter deciduous trees up to 98' tall with a sparse understory. In the southern Coast Range and Transverse and Peninsular ranges, bigleaf maple and California bay are typical dominant trees; however, cottonwood, alder, willow, and dogwood may also be present. The transition between montane riparian zones and adjacent non-riparian vegetation is often abrupt.

Current Conditions: A site visit was conducted on 28JUL21 by Heather Morrison. Dry Creek, a perennial stream, flows along the northern boundary of the property. The channel of this watercourse is located approximately ten feet below the upland area, where the proposed winery and current vineyards are located.

There is a lack of aquatic vegetation such as bulrush, alisma, or duckweed because of perpetually dry summers prohibiting the establishment and long-term survival of these species. Within the riparian area, the predominant tree species is dusky willow (*Salix melanopsis)* and Oregon ash (*Fraxinus latifolius*). Herbaceous species include torrent sedge (*Carex nudatum*), Smilo grass (*Stipa milliaceae*), mugwort (*Artemisia douglasiana*) and tall flatsedge (*Cyperus eragrostis*). Within the transitional zone and upland area, common shrubs and herbaceous species include upright snowberry (*Symphoricarpos albus*) and wild grape (*Vitis californica*). Oaks, specifically coastal live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*) are found generally at the edge of the upland area and above the transitional zone which extends down into the main creek zone.

Figure #1: Edge of Upland Area – Immediately above the transitional zone down into riparian area.

Figure #2: The main channel of Dry Creek (July 2021). Dusky willow can be seen in the immediate area of the channel. Larger, mature oaks are located at the top of the bank and adjacent to the vineyards.

There are vineyard avenues/roads located immediately adjacent to the transitional zone, within the upland vegetation area. These roads are rocked and are located on flat gradients, thus decreasing the chance for erosion into the riparian area. A small informal parking lot is also located near the creek.

Evidence of dumping vegetation trimmings from vineyard maintenance can be found in various areas below the main bank.

Figure #3: Vegetative material thrown over the edge of the bank.

Riparian Area Benefits: Historically, dense riparian vegetation grew along virtually all of Napa County's rivers, creeks, and streams; however, they have declined significantly due to human land-use activities. Today they cover a relatively small portion of Napa County's watersheds, but their ecosystem functions are important to maintaining biological diversity, water quality, and water reliability.

Riparian areas are distinctly different from surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by the presence of water. Riparian habitat can range from dense thickets of shrubs to a closed canopy of large mature trees; while providing riverbank protection, erosion control and improved water quality, recreational and aesthetic values, as well as provide wildlife habitat. The riparian vegetation stabilizes streambanks and resists the flow of floodwaters, while increasing the time available for water to infiltrate into the soil recharging groundwater and alluvial aquifers.

The signs of a healthy riparian area include a well-vegetated area with a diversity of native plants over-hanging water channels. Other indications include stable streambanks, well-defined stream channels, and a high diversity and abundance of wildlife. Unhealthy riparian areas are characterized by sparse vegetation, infestations of invasive plant species, eroded banks, poorly defined stream channels, and low wildlife diversity and abundance.

There is not a single figure of how wide the Riparian zone needs to be to keep water clean, stabilize banks, protect fish and wildlife, and satisfy human demands. Widths can range from 35' to well over 300' depending on slopes, surrounding land-use, and type of vegetation (vertical structure and density). Wider widths are needed for wildlife habitat than for erosion control and water quality purposes. The Project plans include a minimum of 35' stream setback from the top of the bank on slopes less than 1%. The overall width of the riparian vegetation along Dry Creek is relatively narrow and abrupt with the surrounding area being urbanized and/or agricultural; therefore, the species currently using the vegetated area, either as a corridor or residential home would be adapted to disturbance.

Sensitive Species: The cnddb does not have any known listed plant or animal species detections within the Property Parcel (Attachment #4). The closest known listed species that depend upon riparian areas include:

- Western Pond Turtles (*Emys marmorata*) – California Species of Special Concern. There are known western pond turtles approximately 1.7 air-miles to the south of this Project located within private agricultural ponds. Western pond turtles are aquatic turtles of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Basking sites and sandy banks or grassy open fields within 2,000' from water is needed for egg-laying.

  There are no known detections of western pond turtles in Dry Creek; however, the habitat is suitable, during normal climatic years. No western pond turtles were identified during a field visit to the Project Area. There was no water within this stretch of Dry Creek during the July site visit, recognizing the area is currently under drought conditions.

- Foothill Yellow-Legged Frogs (*Rana boylii)* – California Species of Special Concern. There are known foothill yellow-legged frogs approximately 1.6 air-miles to the north of this project located within Hooper Creek, a downstream tributary to Dry Creek. Foothill yellow-legged frogs are frogs are rarely far from permanent rocky streams. Tadpoles need water for at least 3 to 4 months for development.

There are no known detections of foothill yellow-legged frogs in the segment of Dry Creek within 5 miles of the Project Area. No foothill yellow-legged frogs were identified during a field visit to the Project Area. There was no water within this stretch of Dry Creek during the July site visit, recognizing the area is currently under drought conditions.

The National Oceanic & Atmospheric Administration's Essential Fish Habitat (EFH) mapper (NOAA 2021), does not list any Habitat Areas of Particular Concern (HAPC) or Areas Protected from Fishing (EFHA) for the Project Area.

Riparian habitats have an exceptionally high value for many wildlife species, both protected and common. These areas provide water, thermal cover, migratory corridors, as well as diverse nesting and foraging opportunities.

Invasive/Non-Native Species: While non-native species are present in great abundance within the riparian area up into the upland area, a few species are characteristically considered invasive including Himalayan berry (*Rubus armeniacus*), French broom (*Genista monspessulana*), mustard (*Brassica* nigra) and Madagascar periwinkle (*Vinca major*).

Potential Impacts to Dry Creek & Associated Vegetative Communities

The primary threats to riparian areas are hydrological modifications, land conversion, invasive species, and overgrazing or direct disturbances by livestock. The following are potential issues that may arise and recommendations on how this Project can avoid or reduce impacts to the riparian area around Dry Creek and the native vegetative community within the Property Boundary.

Direct Disturbance of Native Vegetation:

- There will be no removing, downgrading, or alteration of the existing native vegetation. Existing vineyards will be the only vegetation disturbed/removed as a result of this project.
- There will be no livestock grazing on the Arrow & Branch Winery property, without proper fencing to keep livestock outside the riparian area. Livestock grazing is not anticipated.
- Temporary orange construction fences shall be installed along the edge of the native vegetative zone prior to Project construction and will be maintained throughout Project construction to assist in keeping equipment outside the native vegetation (including riparian area) zone.
- Leftover material from vineyard/property maintenance has been thrown over the edge of the bank. This material can be a fire hazard and hinder growth of native vegetation. Non-organic material can also contribute to degradation of the watercourse.
    - Existing non-organic material should be manually removed and disposed of property.
    - Existing organic material can be left and allowed to decomposed.
    - Future organic vineyard material can be mulched, removed from the property, or piled outside the native vegetation zone.
    - Storage drums/containers should be stored within a way so potential spills can be property cleaned up, and located well away from the native vegetation zone.

Invasive Species:

- During Project Construction, heavy equipment shall be cleaned prior to coming onto the property and cleaned again if they are removed from the property and brought back.
- Avoid planting invasive non-native plants. Non-native plants that particularly threaten riparian areas in Napa County include: giant reed; Himalayan blackberry; periwinkle; German and English ivy; black locust; French, Scotch and Spanish broom; tamarisk; acacia; eucalyptus; and tree of heaven. **Planting of local, native vegetation is encouraged when landscaping.**
- Monitor and remove invasive non-native plants.

Hydrological/Land-Use:

- Existing vineyards will be the only vegetation disturbed/removed as a result of this project.
- Stormwater control, flood hazard, septic, and plumbing will all adhere to the standards set forth by Federal, State, County, and Local requirements, codes, and permits.
- Vegetative Receiving Areas and Bioretention Areas are anticipated between the Project and the vegetative strip along Dry Creek (Attachment #5).
- There will be no new road crossings across Dry Creek installed or completed as a result of this Project.
- There will be no new water withdrawal from Dry Creek as a result of this Project.

Direct Disturbance to Wildlife:

- The native vegetation along Dry Creek is not expected to change; therefore, no change in habitat is anticipated.
- The native vegetative width along Dry Creek is not expected to change. Species currently using this area are used to disturbance issues.

Monitoring:

Adaptive Management Practices should be utilized. The Landowner should monitor the Riparian Area at least once a year. Photographs can help monitoring efforts by showing any changes over time. Some issues that may need addressing include:

- Trampling of native vegetation by humans may require installing fencing to block human access to the riparian area, but still allow for wildlife passage (i.e., decorative post and pole fences can be used).
    - If public access is desirable, further consulting with someone familiar with landscaping/recreational issues should be consulted regarding design of trails that encourages people to stay on designated trails (i.e. boardwalks). Public Access is not anticipated.
- Invasive plant eradication may have to be completed in multiple years.
- Vineyard workers should be educated on the importance of vegetated Riparian Areas. Informational signs can be posted (“Leave No Trace” or other educational signs can be purchased or specifically made).
- Trash removal – make sure organic (i.e., vineyard waste) or non-organic material is not being dumped within the riparian area.

Attachments:

Attachment #1 = Topographic Project Location
Attachment #2 = Aerial Project Area
Attachment #3 = Vegetation Types Around Project Area
Attachment #4 = Map cnddb Around Project Area
Attachment #5 = Project Plans supplied by Applied

This Report was prepared by:

Pamela Town
Consulting Wildlife Biologist
Forest Ecosystem Management
(406) 490-7427
Pamtown@30@gmail.com

Heather Morrison
Consulting Botanist & RPF
Salix Natural Resource Management
(530) 913-0490
heatherkamille@comcast.net

References:

California Department Fish & Wildlife. California Natural Diversity Database (CNDDB). California Department of Fish and Wildlife, Biogeographic Data Branch. RareFind Version 5. Accessed 2021.

California Department Fish & Wildlife. California Vegetation Classification and Mapping Program (vegCAMP). California Department of Fish and Wildlife. Accessed 2021.

California Natural Diversity Database (cnddb). April 2021. Special Animal List. California Department of Fish & Wildlife. Sacramento, CA.

National Oceanic & Atmospheric Administration (NOAA). United States Department of Commerce. NOAA Essential Fish Habitat Mapper. www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper. Accessed July 2021.

San Francisco Estuary Institute (SFEI). 2017. California Aquatic Resource Inventory (CARI). Version 0.3. Accessed July 2021. https://www.sfei.org/data/california-aquatic-resource-inventory-cari

Forest Ecosystem Management, pllc

1692 East Road * Deary, ID 83823

(406) 490-7427 * Pamtown30@gmail.com

In Cooperation with:

Salix Natural Resource Management

PO Box 684 * Ukiah, CA 95482

(530) 913-0490 * heatherkamille@comcast.net

November 5, 2023

RE: P23-00057 - Arrow & Branch Winery Major Modification

This is in response to Napa County Planning, Building & Environmental Services' Application status letter dated 27JUL23, for the Arrow & Branch Winery. The County was requesting an addendum to the 11AUG21 Biological Report to ensure the conclusions are still valid for the updated project scope.

Arrow & Branch Winery General Information

Project Location: 5215 Solano Avenue; Napa, California (Attachment #1)
Legal of Project Area: Portions of Section 18, T06N, R04W MDB&M
APN: 034-190-040-000
County: Napa County
Proposed Project: Phase 2 of Project (Attachment #2 – Engineer's Map)

Addendum to 11AUG21 Biological Information

Sensitive Species:

The California Department of Fish & Wildlife's cnddb database does not have any new known listed plant or animal species detections within the Property Parcel (Attachment #3).

The National Oceanic & Atmospheric Administration's Essential Fish Habitat (EFH) mapper (Attachment #4), does not list any Habitat Areas of Particular Concern (HAPC) or Areas Protected from Fishing (EFHA) within the Project Area.

Newly Identified Listed Species (*Bombus spp.)*: There are 30 bumble bee species (*Bombus spp*.) present in western North America; with 4 bumble bee species recently listed for candidacy under the California State Fish and Wildlife Endangered Species Act. Of the 4 protected species, 2 have historically been located within Napa County (Western Bumble Bee and Crotch Bumble Bee). The following summarizes the habitat requirements and life history of the newly protected bumble bees.

Life History: Bumble bees are primitively eusocial insects that live in colonies made up of one queen, female workers, and near the end of the season reproductive members of the colony (new queens, and males). New colonies are initiated by solitary queens, in the early spring. This process includes locating a suitable nest site; collecting pollen and nectar from flowers; building a wax structure to store nectar; forming a mass of pollen to lay eggs; and building a wax structure to enclose the eggs and pollen.

Habitat: Bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants. Bumble bees inhabit a wide variety of natural, agricultural, urban, and rural habitats; with species richness tending to peak in flower-rich meadows of forests and subalpine zones; but will be found in riparian areas, grassland, and coastal shrub habitats containing sufficient floral resources. Basic habitat requirements include suitable nesting sites for colonies, nectar and pollen from floral resources available throughout the duration of the colony period, and suitable overwintering sites for the queens.

> Crotch Bumble Bees often select food plant genera including Snapdragon (*Antirrhinum), Phacelia, Clarkia, bush poppy (Dendromecon), California poppy (Eschscholzia),* and buckwheat (*Eriogonum)*. A floral preference appears to be: Milkweed (*Ascelepias*), California Cleome, Larkspur, Yerba, Phacelia, and Blue Curls. The Crotch Bumble Bee is often found within grassland and shrubland in hotter/drier conditions.
>
> Western Bumble Bees often select food plant genera including Sweet clover (*Melilotus),* thistle (*Cirsicum),* clover (*Trifolium), star thistle (Centaurea),* rabbitbrush (*Chrysothamnus),* and buckwheat (*Eriogonum)*. A floral preference appears to be: Glacier Lily, Alpine Sweetvetch, Scarlet Gillia, Capitate Lousewort, and Snowberry. The Western Bumble Bee is often found within flower-rich meadows of forests and subalpine zones.
>
> It is worth noting that floral associations do not necessarily represent bee preference for these plants over other flower plants, but may represent the abundance of these flowers within the bee surveyed landscape.

Breeding Season: Flight period of queens in CA is from early February to late November, peaking in late June and late September. The flight period for workers and males in CA is early April to early November, with worker abundance peaking in early August and male abundance in early September.

Potential Threats: Pesticide use, fire, agricultural intensification, urban development, and climate change.

Project Area: The Parcel does possess snowberry (*Symphoricarpos albus*), a floral preference for Western Bumble bees; however, that is the only floral resource within the select food plant genera for bumble bees. The open areas are primarily vineyards and structures which do not possess the necessary habitat for bumble bees. The area proposed for this Project Scope has been graded in the first phase of

the project or within the footprint of the vineyards; therefore, is not considered bumble bee habitat due to a lack of floral resources.

Recommendations set forth under 11AUG21 Biological Information:

Potential Impacts to Dry Creek & Associated Vegetative Communities

The primary threats to riparian areas are hydrological modifications, land conversion, invasive species, and overgrazing or direct disturbances by livestock. The following are potential issues that may arise and recommendations on how this Project can avoid or reduce impacts on the riparian area around Dry Creek and the native vegetative community within the Property Boundary.

Direct Disturbance of Native Vegetation (from 11AUG21):

- There will be no removal, downgrading, or alteration of the existing native vegetation. Existing vineyards will be the only vegetation disturbed/removed as a result of this project.
- There will be no livestock grazing on the Arrow & Branch Winery property, without proper fencing to keep livestock outside the riparian area. Livestock grazing is not anticipated.
- Temporary orange construction fences shall be installed along the edge of the native vegetative zone prior to Project construction and will be maintained throughout Project construction to assist in keeping equipment outside the native vegetation (including riparian area) zone.
- Leftover material from vineyard/property maintenance has been thrown over the edge of the bank (noted in 2021). This material can be a fire hazard and hinder the growth of native vegetation. Non-organic materials can also contribute to the degradation of the watercourse.
    - Existing non-organic material should be manually removed and disposed of property.
    - Existing organic material can be left and allowed to decompose.
    - Future organic vineyard material can be mulched, removed from the property, or piled outside the native vegetation zone.
    - Storage drums/containers should be stored within a way so potential spills can be properly cleaned up and located well away from the native vegetation zone.

The above conclusions are still valid for the updated project scope for the Direct Disturbance of Native Vegetation.

Invasive Species (from 11AUG21):

- During Project Construction, heavy equipment shall be cleaned prior to coming onto the property and cleaned again if they are removed from the property and brought back.
- Avoid planting invasive non-native plants. Non-native plants that particularly threaten riparian areas in Napa County include giant reed; Himalayan blackberry; periwinkle; German and English ivy; black locust; French, Scotch, and Spanish broom; tamarisk; acacia; eucalyptus; and tree of heaven. **Planting of local, native vegetation is encouraged when landscaping.**
- Monitor and remove invasive non-native plants.

The above conclusions are still valid for the updated project scope for Invasive Species.

Hydrological/Land-Use (from 11AUG21):

- Existing vineyards will be the only vegetation disturbed/removed as a result of this project.
- Stormwater control, flood hazard, septic, and plumbing will all adhere to the standards set forth by Federal, State, County, and Local requirements, codes, and permits.
- Vegetative Receiving Areas and Bioretention Areas are anticipated between the Project and the vegetative strip along Dry Creek
- There will be no new road crossings across Dry Creek installed or completed as a result of this Project.
- There will be no new water withdrawal from Dry Creek as a result of this Project.

The above conclusions are still valid for the updated project scope for Hydrological/Land-Use.

Direct Disturbance to Wildlife (from 11AUG21):

- The native vegetation along Dry Creek is not expected to change; therefore, no change in habitat is anticipated.
- The native vegetative width along Dry Creek is not expected to change. Species currently using this area are used to disturbance issues.

The above conclusions are still valid for the updated project scope for Direct Disturbance to Wildlife. A new addition to Direct Disturbance to Wildlife includes:

- Pre-Project vegetation does not include bumble bee habitat; therefore, there will be no impact on bumble bee candidate species.

Monitoring (from 11AUG21):

Adaptive Management Practices should be utilized. The Landowner should monitor the Riparian Area at least once a year. Photographs can help monitor efforts by showing any changes over time. Some issues that may need addressing include:

- Trampling of native vegetation by humans may require installing fencing to block human access to the riparian area but still allow for wildlife passage (i.e., decorative posts and pole fences can be used).
    - If public access is desirable, someone familiar with landscaping/recreational issues should be consulted regarding the design of trails that encourage people to stay on designated trails (i.e., boardwalks). Public Access is not anticipated.
- Invasive plant eradication may have to be completed in multiple years.
- Vineyard workers should be educated on the importance of vegetated Riparian Areas. Informational signs can be posted (“Leave No Trace” or other educational signs can be purchased or specifically made).
- Trash removal – make sure organic (i.e., vineyard waste) or non-organic material is not being dumped within the riparian area.

The above conclusions are still valid for the updated project scope for Monitoring.

Attachments:

Attachment #1 = Project Location
Attachment #2 = Engineer's Map
Attachment #3 = cnddb Around Project Area (2023)
Attachment #4 = E-FISH Report

This Report was prepared by:

Pamela Town
Consulting Wildlife Biologist
Forest Ecosystem Management
(406) 490-7427
Pamtown@30@gmail.com

Heather Morrison
Consulting Botanist & RPF
Salix Natural Resource Management
(530) 913-0490
heatherkamille@comcast.net

References:

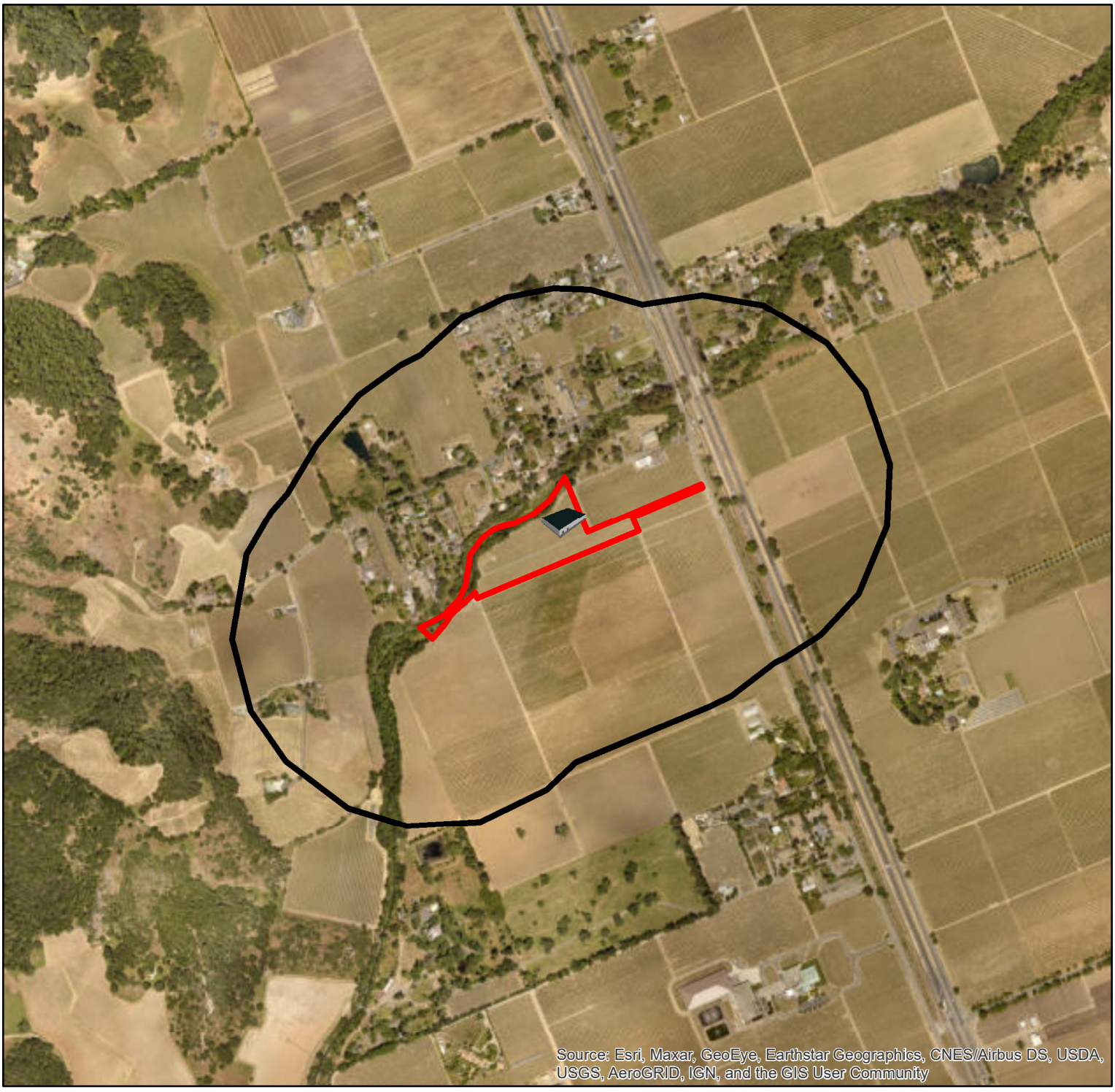
California Department Fish & Wildlife. California Natural Diversity Database (CNDDB). California Department of Fish and Wildlife, Biogeographic Data Branch. RareFind Version 5. Accessed 2023.

California Natural Diversity Database (cnddb). October 2023. Special Animal List. California Department of Fish & Wildlife. Sacramento, CA.

National Oceanic & Atmospheric Administration (NOAA). United States Department of Commerce. NOAA Essential Fish Habitat Mapper. www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper. Accessed 2023.

Attachment #1

Arrow & Branch Winery Project



Legend

- Property Boundary
- Project Area - Winery
- 1/4 Mile Assessment Area

Portions Sec. 18 T06N, R04W MDB&M
APN: 034-190-040-000
Napa County

N
W E
S

1 in = 1,250 ft

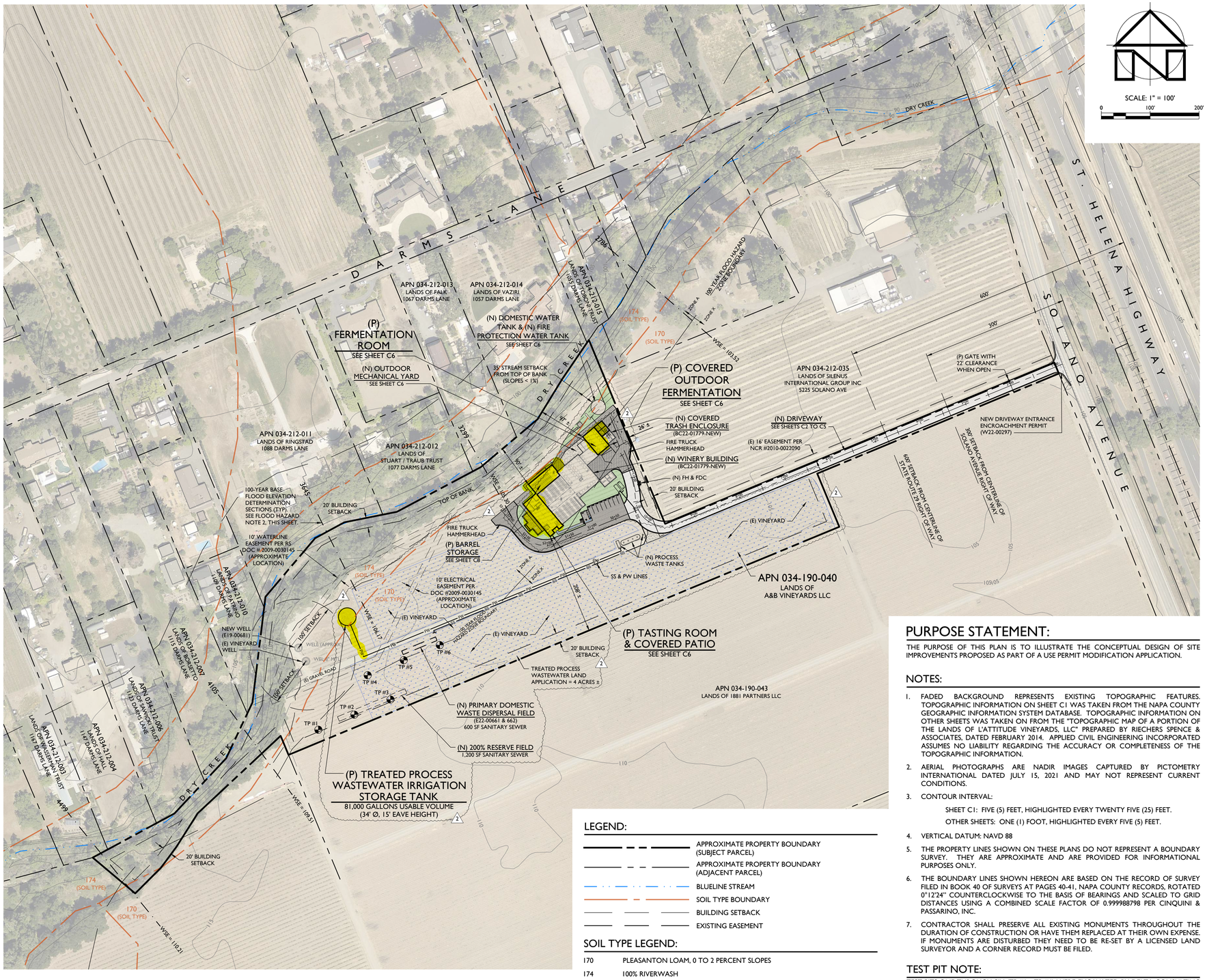
Date: 8/9/2021

Forest Ecosystem Management

Attachment #2

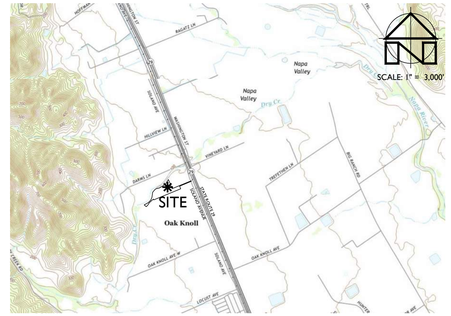
A&B VINEYARDS LLC

USE PERMIT MODIFICATION CONCEPTUAL SITE IMPROVEMENT PLANS



OVERALL SITE PLAN

SCALE: 1" = 100'



LOCATION MAP

SCALE: 1" = 3,000'

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
A&B VINEYARDS LLC
1042 NORTH COAST HIGHWAY
LAGUNA BEACH, CA 92651

SITE ADDRESS:
5215 SOLANO AVENUE
NAPA, CA 94558

ASSESSOR'S PARCEL NUMBER:
034-190-040

PARCEL SIZE:
10.1 ± ACRES

PROJECT SIZE:
2.0 ± ACRES

ZONING:
AGRICULTURAL PRESERVE (AP)

DOMESTIC WATER SOURCE:
PRIVATE WELL

FIRE PROTECTION WATER SOURCE:
STORAGE TANK

WASTEWATER DISPOSAL:
ONSITE TREATMENT AND DISPERSAL

SHEET INDEX:

C1 OVERALL SITE PLAN
C2 DRIVEWAY PLAN & PROFILE STA 0+50 TO STA 9+25
C3 DRIVEWAY PLAN & PROFILE STA 9+25 TO STA 53+25
C4 DRIVEWAY CROSS SECTIONS STA 1+00 TO STA 11+25
C5 DRIVEWAY CROSS SECTIONS STA 11+50 TO STA 53+00
C6 BUILDING AREA CONCEPTUAL SITE IMPROVEMENT PLAN
C7 STORMWATER CONTROL PLAN
C8 IMPERVIOUS SURFACE EXHIBIT

FLOOD HAZARD NOTES:

1. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 06055C0505F, EFFECTIVE SEPTEMBER 29, 2010, ALL OR A PORTION OF THE PROJECT SITE IS LOCATED IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% CHANCE ANNUAL FLOOD (100 YEAR FLOOD). THE APPROXIMATE FLOOD HAZARD BOUNDARY LINE IS SHOWN ON THIS PLAN. SEE FIRM FOR ADDITIONAL INFORMATION.
2. A DETAILED FLOOD STUDY WAS PREPARED BY SCHAAF AND WHEELER AND THE BASE FLOOD ELEVATION AT THE BUILDING SITE ACCORDING TO THAT STUDY IS APPROXIMATELY 105.30 +/- (NAVD 88). THE FLOODWATER ELEVATION WOULD BE CONTAINED WITHING THE BANKS OF DRY CREEK. THE BUILDING WILL NONETHELESS BE ELEVATED MORE THAN 1' ABOVE THE BFE.

EXISTING WINERY PERMIT SUMMARY:

PURPOSE:	PERMIT NUMBER:
PRIOR WINERY USE PERMIT MODIFICATION	P21-00087 (PHASE 1)
GRADING PERMIT	ENG22-00010
FLOODPLAIN PERMIT	ENF22-00020
WINERY BUILDING PERMIT	BC22-01079-NEW
UTILITY-OTHER PERMIT	BC22-01081
FIRE SPRINKLERS PERMIT	F22-00292
FIRE ALARM PERMIT	F22-00258
PROCESS WASTEWATER	E22-00644
SANITARY WASTEWATER	E22-00622

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO ILLUSTRATE THE CONCEPTUAL DESIGN OF SITE IMPROVEMENTS PROPOSED AS PART OF A USE PERMIT MODIFICATION APPLICATION.

NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION ON SHEET C1 WAS TAKEN FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATABASE. TOPOGRAPHIC INFORMATION ON OTHER SHEETS WAS TAKEN ON FROM THE "TOPOGRAPHIC MAP OF A PORTION OF THE LANDS OF L'ATTITUDE VINEYARDS, LLC" PREPARED BY RIECHERS SPENCE & ASSOCIATES, DATED FEBRUARY 2014. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOGRAPHS ARE NADIR IMAGES CAPTURED BY PICTOMETRY INTERNATIONAL DATED JULY 15, 2021 AND MAY NOT REPRESENT CURRENT CONDITIONS.
3. CONTOUR INTERVAL:
   SHEET C1: FIVE (5) FEET, HIGHLIGHTED EVERY TWENTY FIVE (25) FEET.
   OTHER SHEETS: ONE (1) FOOT, HIGHLIGHTED EVERY FIVE (5) FEET.
4. VERTICAL DATUM: NAVD 88
5. THE PROPERTY LINES SHOWN ON THESE PLANS DO NOT REPRESENT A BOUNDARY SURVEY. THEY ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
6. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON THE RECORD OF SURVEY FILED IN BOOK 40 OF SURVEYS AT PAGES 40-41, NAPA COUNTY RECORDS, ROTATED 0°12'24" COUNTERCLOCKWISE TO THE BASIS OF BEARINGS AND SCALED TO GRID DISTANCES USING A COMBINED SCALE FACTOR OF 0.999988798 PER CINQUINI & PASSARINO, INC.
7. CONTRACTOR SHALL PRESERVE ALL EXISTING MONUMENTS THROUGHOUT THE DURATION OF CONSTRUCTION OR HAVE THEM REPLACED AT THEIR OWN EXPENSE. IF MONUMENTS ARE DISTURBED THEY NEED TO BE RE-SET BY A LICENSED LAND SURVEYOR AND A CORNER RECORD MUST BE FILED.

TEST PIT NOTE:

TEST PITS ONE THROUGH SIX (TP #1 - TP #6) WERE EXCAVATED BY DELTA CONSULTING AND ENGINEERING ON FEBRUARY 26, 2014 AND WERE WITNESSED BY A REPRESENTATIVE OF THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION.

LEGEND:

- APPROXIMATE PROPERTY BOUNDARY (SUBJECT PARCEL)
- APPROXIMATE PROPERTY BOUNDARY (ADJACENT PARCEL)
- BLUELINE STREAM
- SOIL TYPE BOUNDARY
- BUILDING SETBACK
- EXISTING EASEMENT

SOIL TYPE LEGEND:

170 PLEASANTON LOAM, 0 TO 2 PERCENT SLOPES

174 100% RIVERWASH

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

APPLIED CIVIL ENGINEERING INCORPORATED
2160 Jefferson Street, Suite 230
Napa, CA 94559
(707) 320-4988 | www.appliedcivil.com

A&B VINEYARDS LLC

USE PERMIT MODIFICATION CONCEPTUAL SITE IMPROVEMENT PLANS
OVERALL SITE PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MAY
No. C 74911
CIVIL
STATE OF CALIFORNIA

FOR USE BY THE PLANNING DEPARTMENT ONLY - NOT FOR CONSTRUCTION
My 30, 2024
End 12/31/2024
9/6/2023

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: SEPTEMBER 6, 2023

REVISIONS:	BY:
3/10/2023 PERMIT SUBMITTAL	YMS
1 5/10/2023 PERMIT RESUBMITTAL	YMS
2 9/6/2023 PERMIT RESUBMITTAL	YMS

JOB NUMBER: 20-139

FILE: 20-139CONC-OSP.DWG

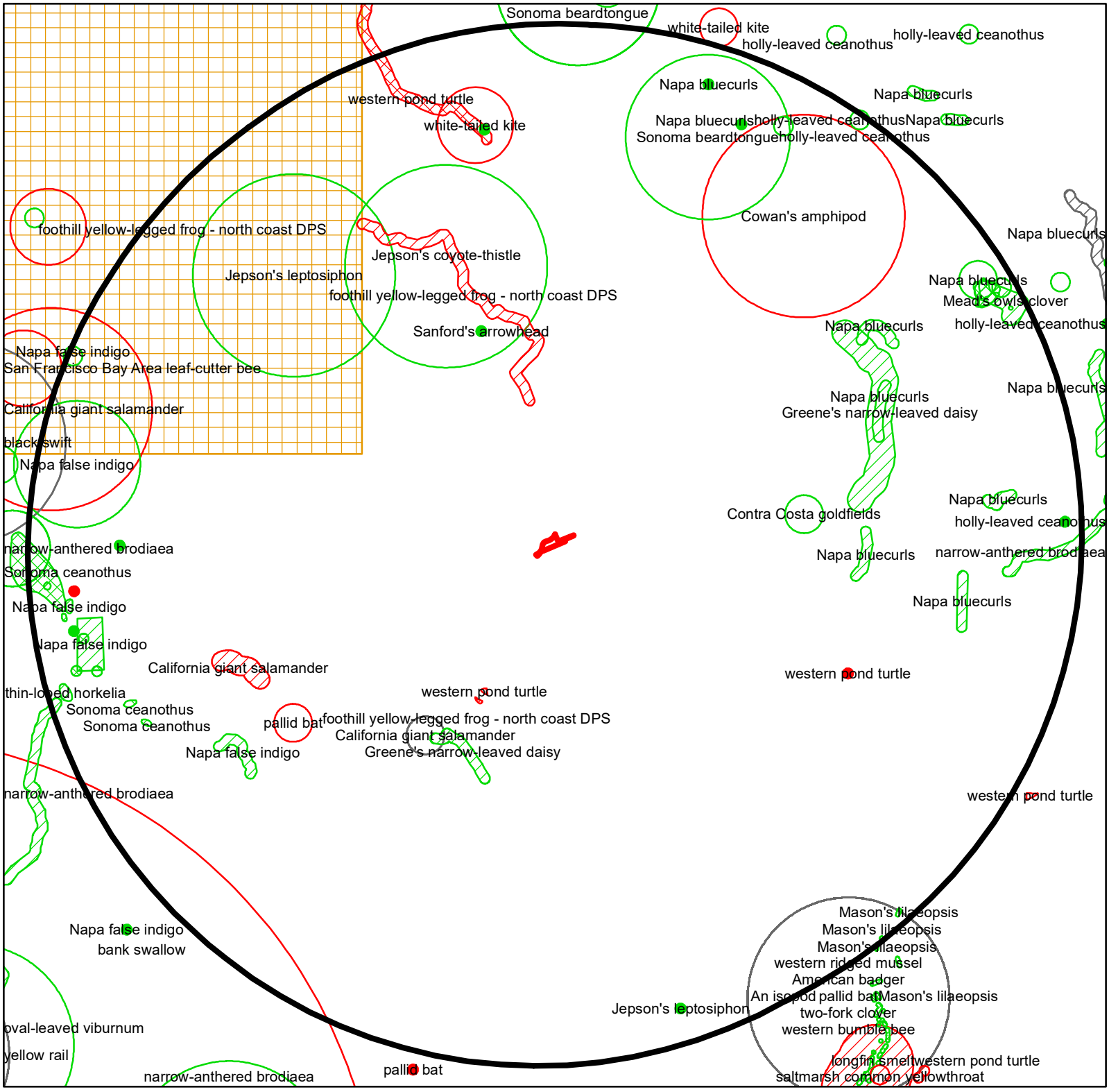
ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C1

OF 8

Attachment #3

Arrow & Branch Winery Project - CNDDB



Legend

- Property Boundary
- 5 Mile Assessment Area

Portions Sec. 18 T06N, R04W MDB&M
APN: 034-190-040-000
Napa County

N
W E
S

1 in = 8,818 ft

Date: 11/4/2023

Forest Ecosystem Management

Attachment #4

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

EFH

No additional Essential Fish Habitats (EFH) were identified at the report location.

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Forest Ecosystem Management, pllc
1692 East Road * Deary, ID 83823
(406) 490-7427 * Pamtown30@gmail.com

Northern Spotted Owl Assessment

Arrow & Branch Winery

Napa County

Report Completed by: Pamela Town, Consulting Wildlife Biologist on July 28, 2021

Northern Spotted Owls (*Strix occidentalis caurina)*

Northern Spotted Owls (NSO) are listed as Threatened under both the Federal Endangered Species Act (ESA) and California State Endangered Species Act (CESA), as well as Sensitive under California Department of Forestry and Fire Protection (CalFire). They are a common to uncommon owl in the coniferous forest of the Pacific Northwest (PNW), ranging from southern British Columbia south to Marin County in northwestern California.

The northern spotted owl is a subspecies of spotted owl (*Strix occidentalis)* found in western North America. They are a medium-sized (16 to 20 inches) dark brown owl with a barred tail, white spots on their head and breast; and dark brown eyes surrounded by a prominent facial disk. The northern spotted owl is a permanent resident in suitable habitat residing in dense, old-growth, and multi-layered second-growth stands of mixed conifer, redwood, and Douglas-fir habitats.

Northern Spotted Owls are rodent specialists, primarily feeding on woodrats (*Neotoma fuscipes*), deer mice (*Peromyscus spp*.), Sonoma tree voles (*Arborimus pomo*), voles (*Microtus spp.)* and northern flying squirrels (*Glaucomys sabrimus*); but has been known to consume small birds, bats, amphibians, and large arthropods. Foraging is completed by searching for prey from a perch and swooping/pouncing on the prey. NSOs usually nest in stick nests (mistletoe clump, abandoned raptor or squirrel nest), in a cavity tree or snag, or in the broken top of a large tree. In the interior region of their range (as seen in Napa County), there appears to be a preference to well-shaded habitat in narrow, steep-sided canyons with north or east-facing slopes to assist in thermoregulatory needs, as they are intolerant of high temperatures.

Spotted owl life-history traits suggest coevolution with late-seral, old growth forests, and second growth forest with scattered late-seral characteristics. They are relatively long-lived and have high adult survival, low reproductive output, and high parental investment in offspring.

Threats to the northern spotted owl include increased competition, and perhaps predation, from the barred owl (*Strix varia).* In addition to the threats from the barred owls, spotted owl populations may also be negatively impacted by unregulated activities that modify habitat and introduce toxic substances into the environment and food chain (i.e. illegal logging, development, marijuana cultivation, etc.).

The Arrow & Branch Winery Project, located off Solano Avenue in Napa California, is located within the range of the Northern Spotted Owl. To reduce potential impact to NSOs, the standard survey methods and take-avoidance measures advocated by the trustee agencies for the spotted owl in California (CalFire 2008 and USFWS 2012 & 2019) were adapted for used for this Project.

Arrow & Branch Winery General Information

Project Location: nkn Solano Avenue; Napa, California (Attachment #1)
Legal of Project Area: Portions of Section 18, T06N, R04W MDB&M
APN: 034-190-040-000
County: Napa County
Proposed Project: Building Winery including structure, parking area, driveway, and landscaping.

Known Northern Spotted Owl Territories

There are no known northern spotted owl territories within 1.3-miles of this Parcel (Attachment #2). The 1.3-mile assessment area was created by USFWS for a Take Avoidance of northern spotted owls within the California Interior (outside the coastal redwood zone). Although the County does have redwoods, the environmental conditions in the area are hotter/drier than the coastal redwood zone; therefore, the 1.3-mile assessment area was used for this Project.

The closest known territory (NAP0016) is located approximately 1.8 miles southwest from this Project (shown on Attachment #1), with this territory being established with only a single detection of a northern spotted owl in June of 1990.

Northern Spotted Owl Habitat

The general attributes for northern spotted owl habitat include a forest with:

- Dense, multi-layered canopy of several tree species.
- Trees of varying sizes and ages.
- Abundant logs, snags/cavity trees, and trees with broken tops or platform-like substrates (i.e., broken tops, mistletoe, debris piles, or old raptor/squirrel nests).
- Open spaces among lower branches to allow flight under the canopy.

USFWS Northern Spotted Owl Take Avoidance Analysis – Interior (Attachment B) dated 27FEB08 further defines NSO habitat as follows:

- High Quality Nesting/Roosting Habitat: Mixed tree species with basal area of 210+ ft2 and $\geq$ 15" quadratic mean diameter, and $\geq$ 8 trees per acre of trees $\geq$ 26" in diameter at breast height, and $\geq$ 60% canopy closure.

- Suitable Nesting/Roosting Habitat: Mixed tree species with basal area ranging from 150 - 180+ ft2 and ≥ 15" quadratic mean diameter, and ≥ 8 trees per acre of trees ≥ 26" in diameter at breast height, and ≥ 60% canopy closure.
- Suitable Forging Habitat: Mixed tree species with basal area ranging from 120 - 180+ ft2 and ≥ 13" quadratic mean diameter, and ≥ 5 trees per acre of trees ≥ 26" in diameter at breast height, and a mix of ≥ 40% to 100% canopy closure.
- Low Quality Foraging Habitat: Mixed tree species with basal area ranging from 80 - 120+ ft2 and ≥ 11" quadratic mean diameter, and ≥ 40% canopy closure.

Recent Wildfire (Last 10-Years): To my knowledge, this Parcel does not fall within the perimeter of any known recent wildfires. The closest recent wildfires were the 2017 Nuns Fire to the West and the 2017 Atlas Fire across the Valley to the East. No recent scorching was noted on the property.

Parcel & Project Area: The Parcel and Project area is primarily existing agriculture (vineyards) with a strip of trees along Dry Creek along the northern boundary of the parcel (Attachment #3). The strip of trees along Dry Creek is approximately 100' to no more than 250' wide. USFWS states that watercourses as well as other narrow habitat strips are not wide enough by themselves to provide functional nesting/roosting habitat (should be at least 300' wide). If the narrow strip is bordered on both sides by unsuitable habitat, then it might be considered functionally foraging habitat at best. As the strip of forest along Dry Creek is so narrow and is surrounded by residential houses, commercial businesses, major highway, and agricultural land (vineyards and hay fields) for well over ¼ mile in all directions (Attachment #3), the strip of forest along Dry Creek is not considered suitable NSO habitat and would not support resident NSOs.

The Proposed Project will not be removing any trees. The Proposed Project will not be altering any vegetation along Dry Creek. Only existing vines will be altered.

Northern Spotted Owl Surveys

Northern Spotted Owl Take Avoidance Scenarios: For the purpose of review of this Project, the following scenario could be used by USFWS to determine whether a take is likely to occur for spotted owls.

Scenario 1:

A. No Suitable Habitat within harvest units, and
B. No Suitable Habitat within 0.25 miles of timber operations

Northern Spotted Owl Surveys: As there is no suitable NSO habitat within the Project Area and no suitable NSO habitat within 0.25 mile; no NSO surveys are required.

Northern Spotted Owl Project Protection Measures

- No Trees will be removed.
- No vegetation along Dry Creek will be altered.
- There is no suitable NSO habitat within the Project Area or within 0.25 mile of the Project.
- There are no known NSO territories within 1.3 miles of the Project Area.
- No northern spotted owl surveys are required.
- No operations, other than the use and maintenance of existing roads, will occur within 1,000' of any occupied spotted owl activity center. ***At this time, there are no known NSO activity centers within 1.3 miles of this Project***.
- Seasonal disturbance buffers (1/4 mile) will be observed for occupied sites during the breeding season (01FEB – 31AUG) or at least until protocol surveys support probable absence, non-nesting, nest failure, or fledgling flight can be determined. ***At this time, there are no known NSO activity centers within 1.3 miles of this Project.***
- If Project Description changes from that listed within this Assessment, a new NSO Assessment may be required.

Attachments

Attachment #1 – Topographical Map – Project Location and NSOs within 1.3 Miles (1 page)
Attachment #2 – CA Fish & Wildlife Spotted Owl Sites Found – Report #1 (1 page)
Attachment #3 – Aerial Photo of Project Area and ¼ Mile Assessment Area (1 page)

Northern Spotted Owl Contact Information

Questions or comments regarding this NSO information can be directed to:

Pamela Town
Consulting Wildlife Biologist & SOE
Forest Ecosystem Management, PLLC
(406) 490-7427
Pamtown30@gmail.com

Other Information

Definitions:

- Activity Center: Area of concentrated activity of either a pair of NSOs or a single territorial NSO, represented by a mapped location (usually a nest tree) that occurs within, but not necessarily in the exact center of, the core area. Where clusters of site centers exist in a core area a geographic centroid or nearest neighbor calculation may be used as a designated activity center for habitat analysis purposes. A single territory may also have more than one designated activity center.
- Territory: A spatial area of landscape that is defended by a single resident or pair of northern spotted owls. Specific NSO territories generally refer to a fixed geographic area. Over time, individual spotted owls may occupy different territories (i.e. breeding dispersal, interference competition with barred owls, changes in habitat or prey availability, etc.).

- Home Range: In the absence of site-specific data, the home range is a 1.3-mile radius circle centered on the activity center.
- Territory Identification Number (NAP0005): A number generated by the California Department of Fish & Wildlife assigned to a geographic area currently and/or historically occupied by northern spotted owls.
- Suitable Habitat: Areas meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- Unsuitable Habitat: Areas not meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- NSO Breeding Season: February 1 to August 31st within the inland ecotype.
- Degrade Habitat: Signifies when treatments have a negative influence on the quality of habitat due to the removal or reduction of NSO habitat elements but not to the degree where the existing habitat function is changed.
- Downgrade Habitat: Treatments that reduce habitat elements to the degree the habitat will not function in the capacity that exists pre-treatment, but the activities will not remove habitat entirely.
- Assessment Area: The area used to address northern spotted owls includes 1) Project Footprint; 2) Area within ¼ mile of Project Footprint; 3) 1.3 miles from Project Footprint.

References:

CalFire FRAP Fire Perimeters. https://frap.fire.ca.gov/frap-projects/fire-perimeters/ Website accessed 2021.

CalFire. 2008. Important Information for Timber Operations Proposed within the Range of the Northern Spotted Owl. California Department of Forestry & Fire Protection. February 2008.

Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior. United States Department of Interior Fish & Wildlife Service. February 2008.

Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior. United States Department of Interior Fish & Wildlife Service. Updated November 2019.

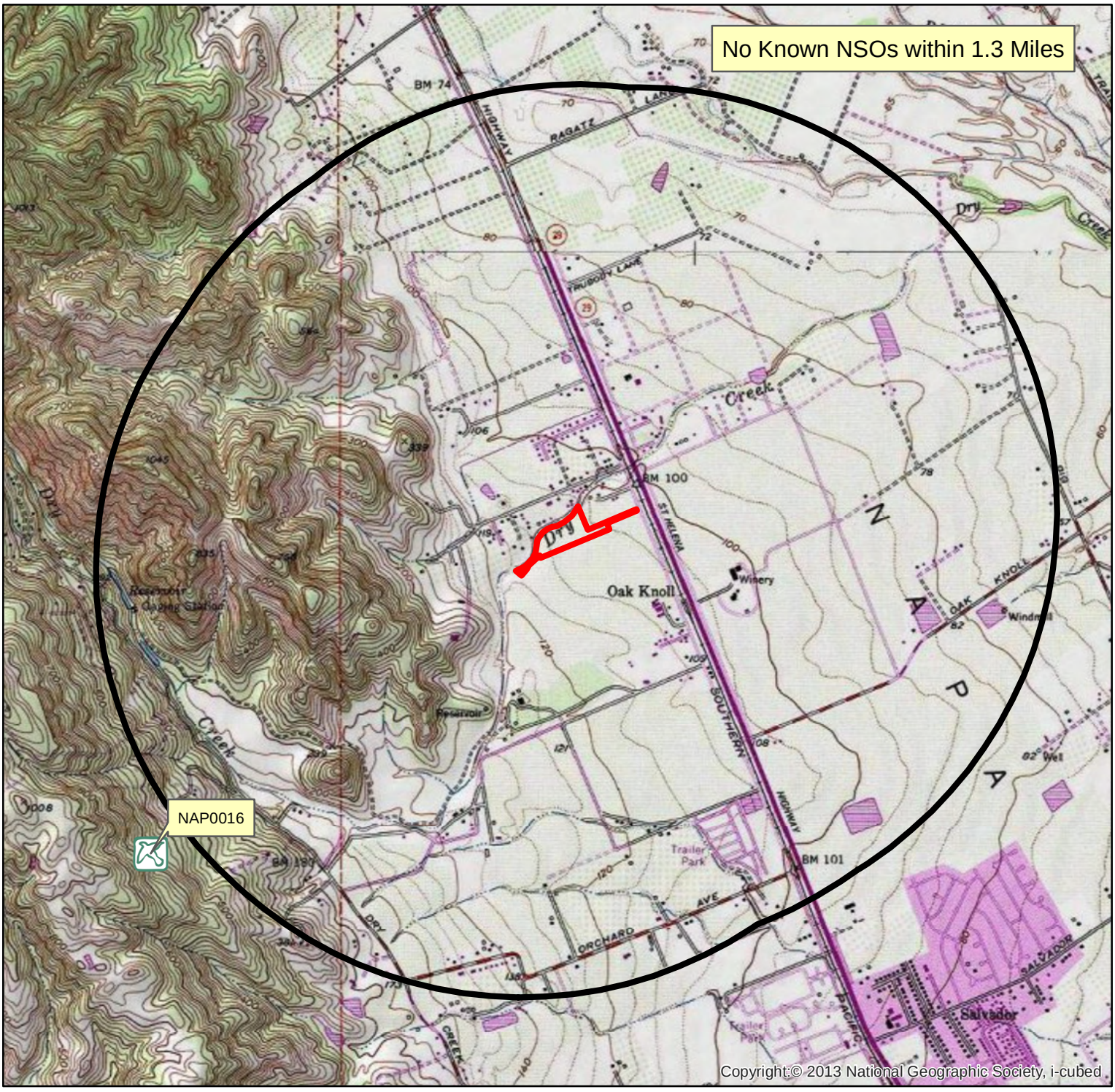
Northern Spotted Owl Viewer (BIOS CA Natural Diversity Database). Managed by California Department of Fish & Wildlife.

Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls. Endorsed by the U.S. Fish & Wildlife Service. February 2, 2011 and Revised January 9, 2012.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, eds. 1988 – 1990. California's Wildlife. Vol. I – III. California Department of Fish & Game, Sacramento, CA.

Attachment #1

Arrow & Branch Winery Project Location



Legend

- Property Boundary
- 1.3 Mile Assessment Area
- NSO

Portions Sec. 18 T06N, R04W MDB&M
APN: 034-190-040-000
Napa County

N
W E
S

1 in = 2,917 ft

Date: 7/22/2021

Forest Ecosystem Management

Attachment #2

Data Version Date:
06/29/2020

Report Generation Date:
7/22/2021

Report #1 - Spotted Owl Sites Found
Known Spotted Owl sites having observations within the search area.

Meridian, Township, Range, Section (MTRS) searched:

M_06N_04W Sections(07,08,09,16,17,18,19,20,21,28,29,30);

M_06N_05W Sections(11,12,13,14,23,24,25,26);

NOTES:

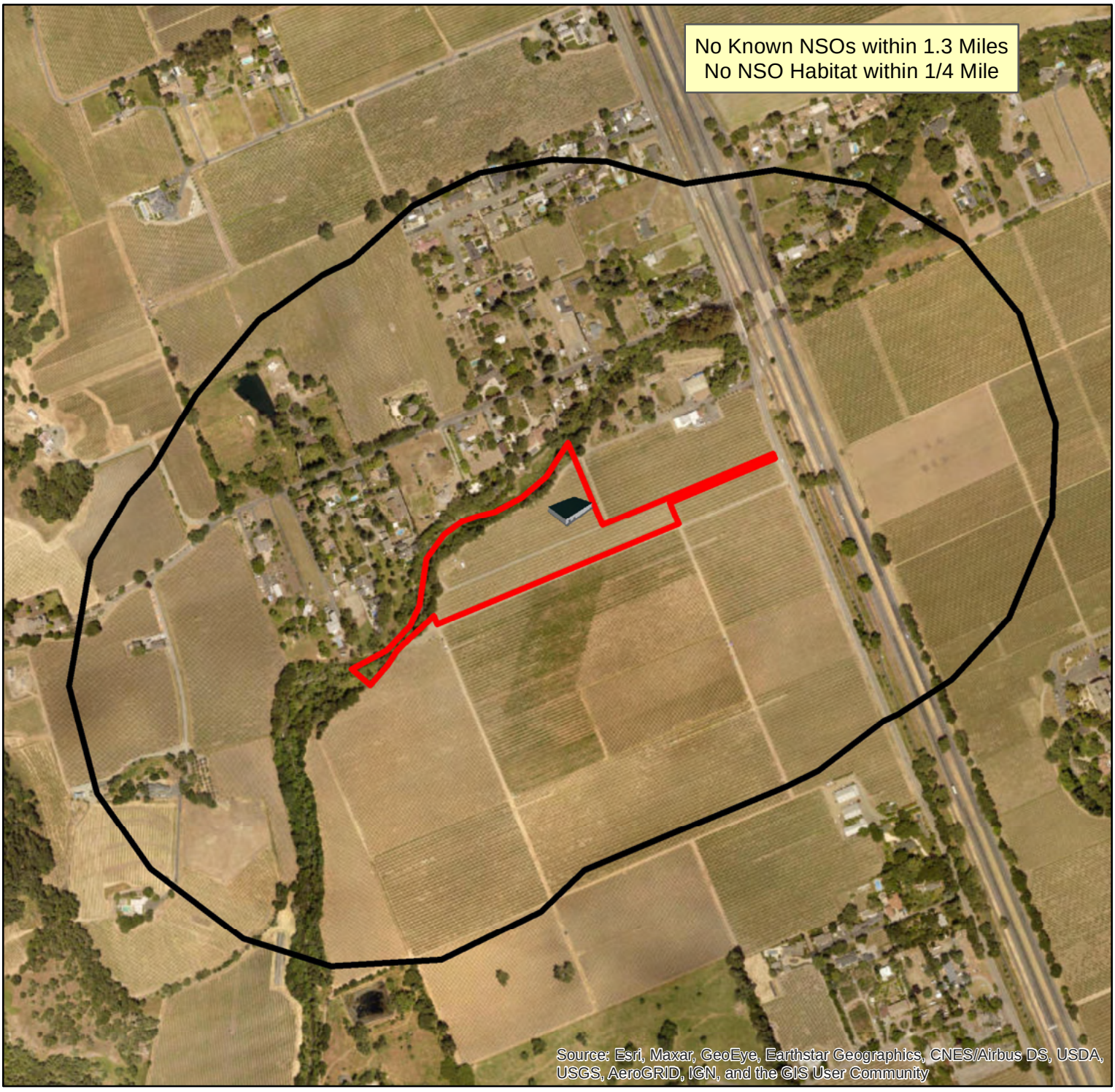
Arrow & Branch Winery

Masterowl	*Subspecies*	*LatDD NAD83*	*LonDD NAD83*	*MTRS*	*AC Coordinate Source*
NAP0010	NORTHERN	38.343553	-122.396663	M 06N 05W 27	Contributor 3.9 Miles
NAP0016	NORTHERN	38.347983	-122.365383	M 06N 05W 24	Contributor 1.8 Miles
NAP0020	NORTHERN	38.337498	-122.376345	M 06N 05W 26	Contributor 3+ Miles
NAP0031	NORTHERN	38.371590	-122.391900	M 06N 05W 15	Contributor 3.4 Miles
NAP0038	NORTHERN	38.355946	-122.405716	M 06N 05W 22	Contributor 4+ Miles

Owls in 1.3 Miles: None

Attachment #3

Arrow & Branch Winery Project



Legend

- Property Boundary
- Project Area - Winery
- 1/4 Mile Assessment Area

Portions Sec. 18 T06N, R04W MDB&M
APN: 034-190-040-000
Napa County

N
W E
S

1 in = 833 ft

Date: 8/2/2021

Forest Ecosystem Management