



# Napa County Left-Turn Lane Screening Form

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## User Guide

### Purpose

This User Guide describes how to complete the Napa County Left-Turn Lane Screening Form and explains the purpose of each step within the evaluation process. This process relies on data and analysis from the Napa County Traffic Impact Study Guidelines (“TIS Guidelines”). The underlying methodology for this process is from the National Cooperative Highway Research Program (NCHRP) Report 745, refined to be compatible with the County’s TIS Guidelines and the unique nature of Napa County’s context and transportation network.

The screening form is intended to provide a consistent process for evaluating whether a left-turn lane may be warranted for projects connecting to County roadways. The form is intended to support, not replace, engineering judgment and County review. All submitted information and resulting evaluations remain subject to review and approval by Napa County Public Works.

The screening form is intended primarily for projects located on two-lane rural County roadways, where modifications to an existing side street or installation of a new side street is proposed, forming a three-legged intersection. In scenarios where the project would propose changes that would create or modify a side street controlled four-legged intersection, the Applicant should use the same steps in this User Guide but using the appropriate graphs from NCHRP Report 745.

### General Instructions

1. Complete all project information fields at the top of the form.
2. Proceed through each step in order.
3. Only enter values (by double clicking) into cells that are highlighted yellow.
4. Do not modify formulas, formatting, or protected cells.
5. Supporting traffic count data and calculations should be included in the associated Traffic Impact Study (TIS) documentation.

Most information required by the form should already be available from data collected and analyzed as part of the data collection and traffic analysis processes described in the TIS Guidelines.

There shall be no changes or alterations to this Left-Turn Lane Screening Form. Any modifications will result in the worksheet being rejected.

### Automated Calculations and Messages

The form includes automated messages that alert the user when:

- The screening process may not apply;

- Additional agency coordination may be required;
- Sight distance may be inadequate; or
- Further County review is necessary.

These messages are intended to assist the applicant and do not replace County review or engineering judgment.

## Project Information

The top portion of the form requests basic project and preparer information, including:

- Project name and number
- Applicant company/firm
- Preparer name
- Preparer email and phone number
- Date
- Project location or APN

This information is used for documentation and County review purposes.

If the project connects to a Caltrans roadway (e.g., SR 29, SR 121, or SR 128), Caltrans processes may also be applicable in addition to this left-turn lane screening process. In addition, the County reserves the right to determine if a left-turn lane would be warranted, particularly on corridors such as Silverado Trail and other regionally significant arterials and collectors.

## Step 1 — Data Input

Step 1 summarizes data collection efforts conducted for the associated Traffic Study shall be consistent with the Napa County current Traffic Impact Study Guidelines. These values are subject to review and approval by County staff.

### Data Collection Dates

Enter the start and end dates for the traffic count data collection effort. These should be the dates data was collected that will be used on this form, specifically the daily traffic counts and speed data (if applicable).

The form will automatically indicate whether a seasonal adjustment is applicable in accordance with the current Napa County Traffic Impact Study Guidelines. The data inputted into the form will not apply the seasonal adjustment, applicant shall ensure volume data is the appropriate values per the TIS methodology.

### 24-Hour Vehicle Count on Major Street

Indicate whether a 24-hour vehicle count was collected on the major roadway adjacent to the project site. This information is used to support the left-turn lane evaluation. If data was not collected as part of the TIS process, applicant should coordinate with County staff to determine appropriate locations for volume and speed data collection for a period of 7 consecutive days that do not coincide with a holiday. The County reserves the right to require the applicant to collect daily traffic

counts and speed data in lieu of solely using the posted speed limit as a basis for calculations as part of this process.

### 85th Percentile Speed

If speed data was collected as part of the traffic count effort described above, indicate that the 85th percentile speed was collected and enter the measured speed value. Actual measured speeds are preferred whenever available.

### Posted Speed Limit + 7 MPH

If measured speed data has not been collected or available, the form may use the posted speed limit plus 7 mph as an estimated design speed. This methodology is consistent with industry best practices commonly used for sight distance evaluations when measured operating speeds are unavailable.

## Step 2 — Volume-Based Left-Turn Lane Warrant Calculation

Step 2 evaluates whether traffic volumes meet the screening thresholds associated with a potential left-turn lane warrant.

### Major and Minor Street Information

Enter:

- Major roadway name
- Minor roadway or project driveway name

### Minor Street Additional Information

If a project contains a driveway loop (where one driveway is exclusive to entering traffic, and another driveway is exclusive to exiting traffic), the left-turn lane warrant must be applied to the driveway that is exclusive to entering traffic only.

If a project contains multiple driveways, the project shall be evaluated as one driveway. Therefore, all turning volumes must be evaluated at one project access point and must not be distributed amongst the multiple driveways. The County may exercise an exception if the driveways are spaced more than 500 feet away, and if the County's discretion finds a reasonable split of entering traffic based on the County's site plan review.

### Traffic Volume Inputs

Enter the applicable peak-hour turning movement volumes, including:

- **Major advancing through volume** – This is the number of vehicles in the same direction as the left turning vehicles not including the vehicles estimated to turn left
- **Major opposing volume** – this is the number of vehicles in the opposing direction as the left turning vehicles, not including estimated number of vehicles turning right into the minor roadway or driveway.

- **Major left-turn volume** – This is the number of vehicles estimated to turn left into the minor roadway or driveway.
- **Major right-turn volume** – This is the number of vehicles estimated to turn right into the minor roadway or driveway.

These values should be derived from the project traffic analysis and associated turning movement counts. The estimated number of vehicles generated by the proposed project and assigned to the inbound and outbound direction, and to and from each direction should be determined based on the traffic engineering methodology in the TIS Guidelines. If the project is not required to complete a TIS per the screening criteria, the same travel demand calculation and assignment methodology should be used to determine the appropriate volume to use for this screening tool.

For winery uses where the peak hour trip generation was calculated using the County Winery Trip Generation Worksheet, the peak hour left turn volume should be 1/3 of the peak hour trip generation of the proposed project. This is based on the following reasonable assumption for trip assignment during the peak hour of a winery-related land use:

- 50% inbound, 50% outbound split
- Of the inbound traffic, 1/3 assumed to right turns into the site, and 2/3 assumed to left turns into the site.
- Therefore, 1/3 of the total peak hour trip generation shall be the left-turning volume into the driveway (Inbound left turns = Total Trips \* 50% Inbound \* 2/3 Assumed Left Turns = 1/3 \* Total Trips).

Applicant may propose a different methodology to determine the peak hour left turn into the site, and may provide that methodology and results to the County for their approval.

**Automated Evaluation.** Once the required traffic volumes are entered, the form automatically evaluates whether the traffic volumes meet the screening criteria for a left-turn lane.

The resulting output will display either “Yes” or “No”. This output represents the result of the screening evaluation only and does not constitute final County approval.

**Automated Graph.** The workbook also includes a graphical display of the entered traffic volumes.

The graph automatically plots the project data on a chart similar to the warrant figures presented in NCHRP Report 745. This visualization allows the user and reviewing staff to see where the project volumes fall relative to the screening thresholds. No additional user input is required for the graph.

## Step 3 — Evaluate Sight Distance

Step 3 evaluates whether adequate stopping sight distance is available for motorists approaching a vehicle waiting to turn left into the project access or minor street. If there is not adequate distance for an advancing motorist to see a motorist ahead of the waiting to turn left, and comfortably come to a stop before reaching that motorist, a left turn pocket could be one of several transportation improvements to address the insufficient stopping sight distance.

### Required Stopping Sight Distance

The form automatically calculates the required stopping sight distance using the speed information entered in Step 1.

## Available Sight Distance

Enter the available clear sight distance, measured in feet. Available sight distance should be measured in the direction of approaching traffic from the perspective of an advancing motorist traveling on the major roadway. Measurements should reflect actual field conditions, including horizontal curvature, vertical curvature, landscaping, fencing, vegetation, or other obstructions.

## Sight Distance Evaluation

The form automatically compares:

- Required stopping sight distance; and
- Available stopping sight distance.

The form then indicates whether adequate stopping sight distance is available.

If available sight distance is less than the required stopping sight distance, the form will indicate that inadequate stopping sight distance exists and that a left-turn lane may be one potential mitigation measure.

## Applicant Certification

The applicant must certify that the information provided is accurate to the best of their knowledge and is based on:

- Available traffic data
- Project trip generation estimates
- Existing roadway geometry
- Applicable County guidance

The completed form should be submitted along with the associated Traffic Impact Study materials for County review.

## References

- The latest Napa County Traffic Impact Study Guidelines
- The latest Napa County Road and Street Standards
- NCHRP Report 745, *Left-Turn Accommodations at Unsignalized Intersections*
- Caltrans Highway Design Manual
- AASHTO Green Book (current edition)

## Limitations and Important Notes

This screening process is based on transportation engineering practices and published research available at the time of its development, including applicable AASHTO guidance, NCHRP research, and the Napa County Traffic Impact Study Guidelines. The process was developed primarily for evaluating access to two-lane County roadways and may not be appropriate for all roadway classifications, operating environments, or site conditions.

The purpose of this tool is to provide an initial screening-level assessment of whether a left-turn lane may be operationally or safety warranted. The tool is intended to promote consistency in the evaluation process and to assist applicants and County staff in identifying locations where a left-turn lane may merit further consideration.

A determination that a left-turn lane is warranted does not indicate that a left-turn lane is feasible, required, or approved. The screening process does not evaluate physical design constraints, available right-of-way, utility conflicts, environmental impacts, drainage considerations, permitting requirements, or other factors that may affect implementation. Additional engineering analysis may be required to determine whether a left-turn lane can be reasonably accommodated and designed in accordance with applicable standards.

The results of this screening process are dependent upon the accuracy and completeness of the information entered by the applicant. Napa County may request supporting documentation, verify submitted information, or require additional data collection or analysis where warranted.

This tool is intended to support, not replace, professional engineering judgment. Unique site conditions, roadway characteristics, operational considerations, crash history, multimodal factors, and other project-specific circumstances may justify conclusions that differ from the screening results.

Completion of this screening form does not constitute County approval, entitlement, permit authorization, or acceptance of any proposed access configuration. Napa County Public Works retains final authority regarding access requirements and left-turn lane determinations and may require additional analysis, modifications, or improvements based on project-specific conditions. A determination that a left-turn lane is not warranted through this screening process does not preclude Napa County from requiring additional analysis or improvements where deemed appropriate.