Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

MEMORANDUM

Date: May 27, 2021

To: Sheryl Flores, People's Self Help Housing

From: Michelle Matson and Joe Fernandez, CCTC

Subject: VTM TR 3131 – Traffic Impact Analysis

This memorandum summarizes Traffic Impact Analysis for tract map (TR) 3131 located in the community of San Miguel in unincorporated San Luis Obispo County. The 16 lot subdivision includes 14 new single family dwelling units which would generate 132 new vehicle trips per weekday, including ten AM peak hour trips and 14 PM peak hour trips. The site plan is shown in **Figure 1.** The following intersections were analyzed under Existing and Cumulative Conditions with and without the project:

1. 11th Street/Mission Street
2. 11th Street/N Street

TRAFFIC IMPACT ANALYSIS SUMMARY

Under Existing and Cumulative Conditions with the project, the maximum 95th percentile westbound queue on 11th Street at Mission Street is approximately three vehicles. There is currently storage for five to six vehicles and the project would not impact Union Pacific Railroad (UPRR) operations.

The San Miguel Road Improvement Fee (RIF) includes a traffic signal at the intersection of 11th Street/Mission Street (#1) under Cumulative Conditions. The project will pay their fair share for the improvements by payment of the RIF based on the number of PM peak hour trips.

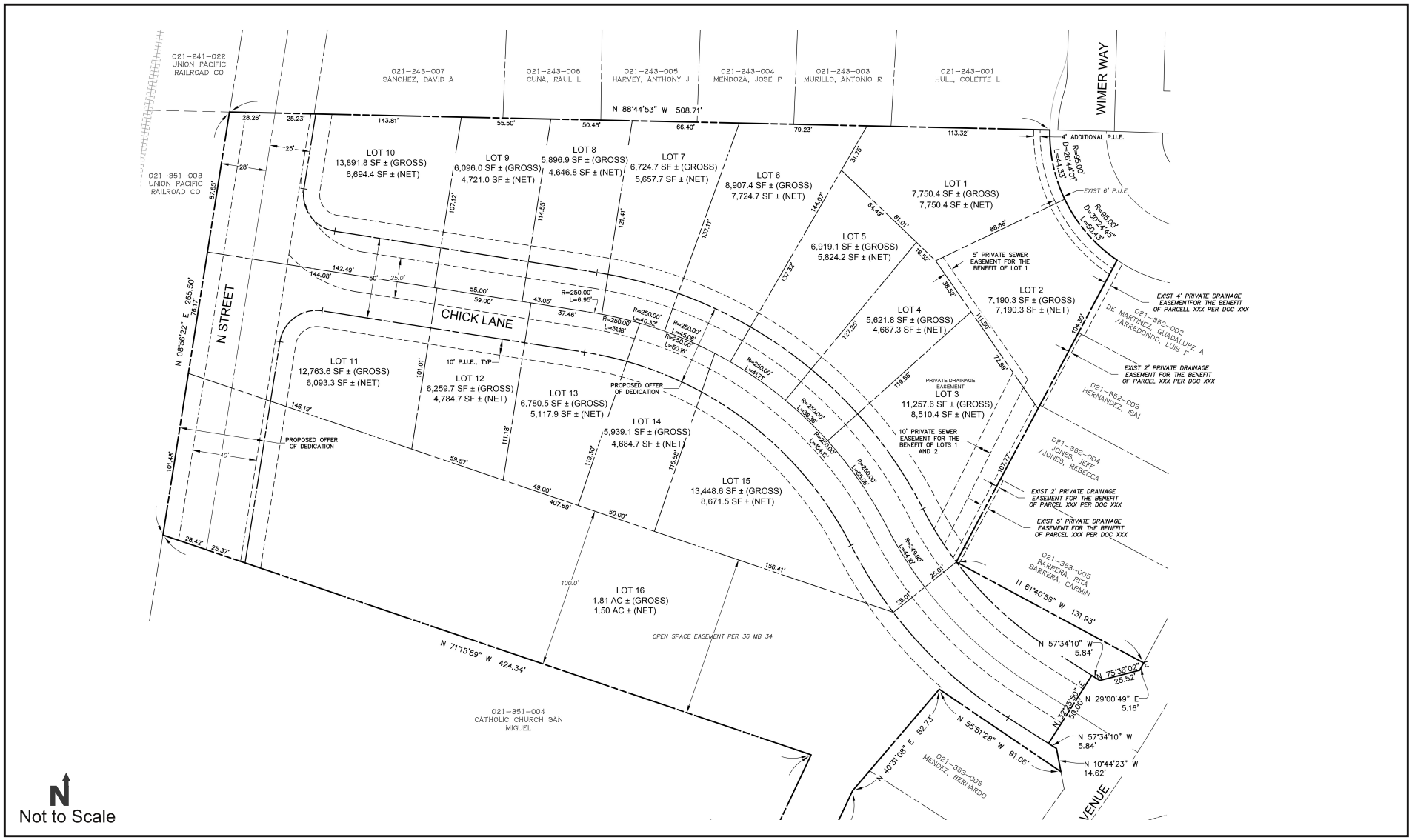
Currently, the N Street approaches are stop controlled at 11th Street. However, the County Traffic Regulation Codes (August 2020) designate the southbound N Street approach as yield controlled with no designation for the northbound approach. No improvements are recommended at the intersection and we recommend the County Traffic Engineer modify the Traffic Regulation Codes to reflect current conditions.

CEQA ANALYSIS

In 2021, the County released draft guidelines and a sketch planning tool for evaluating transportation impacts using vehicle miles traveled (VMT) consistent with recently mandated changes to CEQA and state Office of Planning and Research (OPR) guidance. The County's SB743 Sketch VMT Tool was used. With 13 dwelling units, the project would be under the minimum daily trip threshold and no analysis required. However, with 14 dwelling units the project exceeds the VMT per capita thresholds as shown in **Attachment A**. The existing neighborhoods in San Miguel north of River Road and west of UPRR are mapped as having below-threshold VMT. However, the project is not included in these areas.

OPR guidance notes that "a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT." Caltrans previously prepared an Affordable Housing Trip Generation Strategies and Rates Report in 2018. The study noted that, "affordable housing sites generate 35% fewer motorized vehicle trips in the PM peak hour, on average, than would be predicted using ITE data. There was little difference in the AM peak, however."

Figure 1: Site Plan



Source: North Coast Engineering

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VTM TR 3131

The proposed project will be occupied by residents making below 80 percent of the median income. The project is infill and compatible with the existing land uses in the neighborhood. Based on a May 2017 roadway count on 11th Street east of Mission Street, the AM and PM peak hour made up 7% and 12% of the 769 average daily vehicles (ADT), respectively. If the 14 PM peak hour trips calculated using ITE were reduced by 35%, nine PM peak hour trips would be expected. Applying the 7% and 12% to the AM and PM project trip generation would result in less than the 110 daily trip threshold.

We recommend the County find a less-than-significant impact on VMT for the proposed affordable housing project.

EXISTING SETTING

The existing roadways in the vicinity of the project include:

- *11th Street* is a two-lane local roadway with no posted speed limit and intermittent pedestrian facilities. 11th Street is uncontrolled at N Street and stop controlled at Mission Street.
- *Mission Street* is a two-lane arterial with a posted speed limit of 25 miles per hour (MPH) and Class II bike lanes in the project vicinity. There is curb, gutter, and sidewalk on the west side and no pedestrian facilities on the east side. Mission Street is uncontrolled at 11th Street. San Luis Obispo Regional Transit Authority (SLORTA) Route 9 provides minimal service to San Miguel with only three stops per day on Mission Street at 14th Street.
- *N Street* is a two-lane local road with no posted speed limit. South of 11th Street, N Street is improved with curb and gutter on both sides and a sidewalk on the east side. North of 11th Street, the road is unimproved with no paved shoulders or pedestrian facilities.

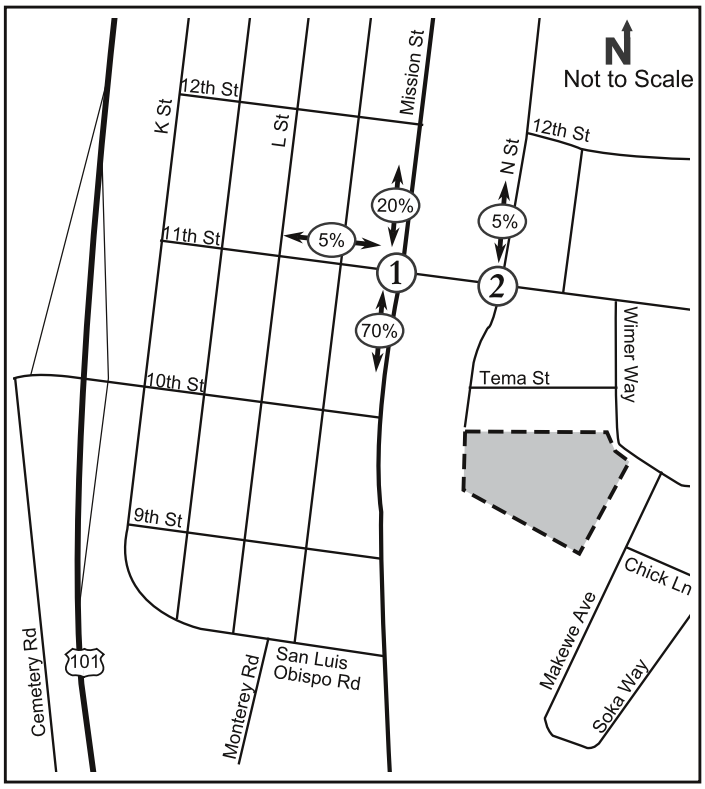
EXISTING TRAFFIC VOLUMES

Weekday peak hour vehicle, pedestrian, and bicycle turning movement counts were collected from 7-9 AM and 4-6 PM in May 2021 at the 11th Street intersections with Mission Street and N Street. The turning movement counts are included as **Attachment B**.

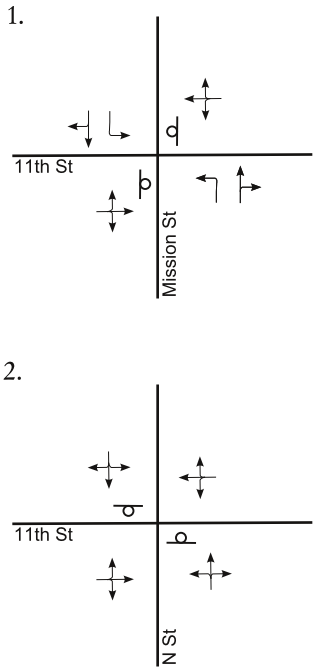
The 2021 turning movement counts were compared to the 2017 volumes collected for the San Miguel Circulation Study & Roadway Improvement Fee Update (GHD, 2020). Volumes turning to and from 11th Street were higher in 2021 due to the additional development constructed since 2017. The 2021 volume on Mission Street north of 11th Street in the turning movement count was approximately 13% and 5% lower than the 2017 turning movement count volumes in the AM and PM peak hour, respectively.

Existing (No Project) intersection volumes were developed using the higher movement volume from the 2017 and 2021 counts for 11th Street/Mission Street (#1), then the volumes over the UPRR tracks were balanced. The 2021 and Existing (No Project) intersection volumes are shown in **Figure 2**. The 2021 intersection peak hour factors (PHF) were used. Intersection operations and queuing are discussed in detail under Existing Plus Project Conditions.

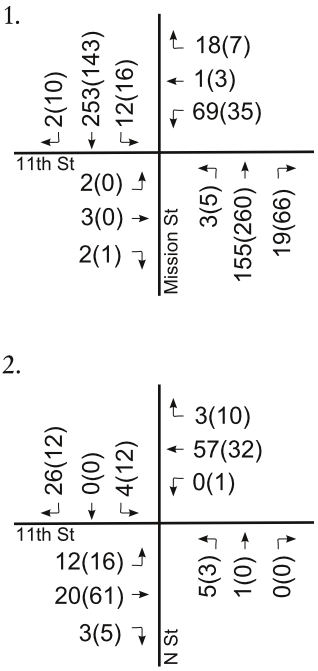
Figure 2: Volumes and Lane Configurations



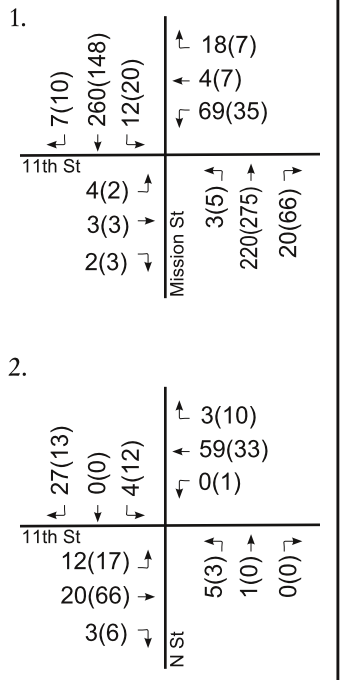
Existing Lane Configurations



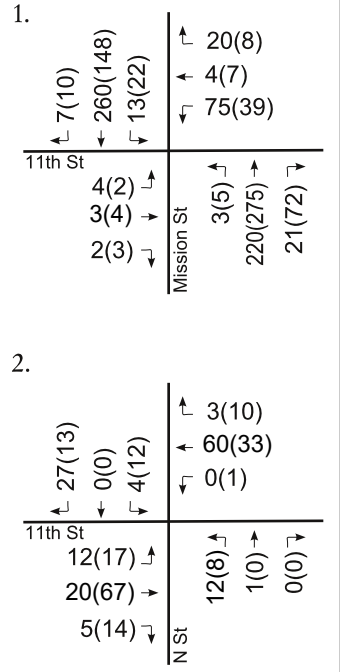
May 2021 Counts (Not used in analysis)



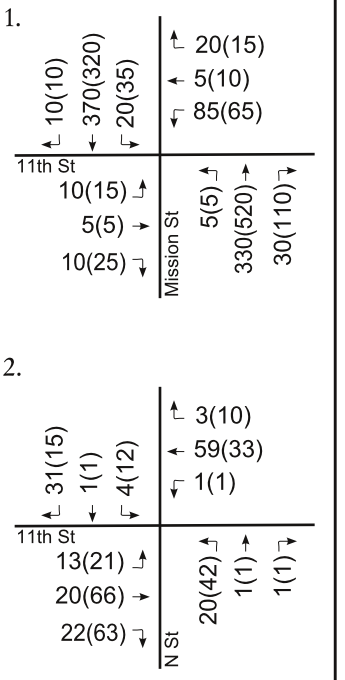
Existing No Project Volumes



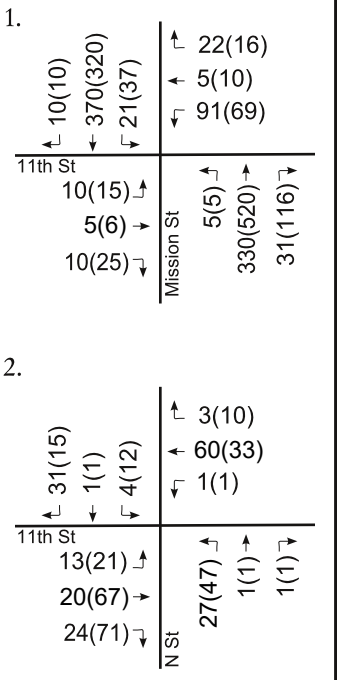
Existing Plus Project Volumes



Cumulative No Project Volumes



Cumulative Plus Project Volumes



Legend:

- (x) - Study Intersection
- Project Site
- xx(yy) - AM(PM) Peak Hour Traffic Volumes
- Stop Sign
- x% - Project Trip Distribution

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TRIP GENERATION AND TRIP DISTRIBUTION

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th Edition was used to estimate project trip generation as shown in **Table 1**.

Table 1: Project Trip Generation

Project Trip Generation								
		Daily	AM Peak Hour			PM Peak Hour		
Land Use	Size	Total	In	Out	Total	In	Out	Total
Residential[1]	14 DU	132	2	8	10	9	5	14
Net New Vehicle Trips		***132***	***2***	***8***	***10***	***9***	***5***	***14***

SF = Square Feet; ITE = Institute of Transportation Engineers.

1. ITE Land Use Code #210, Single-Family Detached Housing. Average rates used.

Source: ITE Trip Generation Manual, 10th Ed. and Trip Generation Handbook, 3rd Ed., 2017; CCTC, 2021.

The project would generate 132 new vehicle trips per weekday, including ten AM peak hour trips and 14 PM peak hour trips. The project trip distribution was estimated using the traffic counts and local knowledge. The trip distribution is shown in **Figure 2**.

EXISTING PLUS PROJECT CONDITIONS

The Existing and Existing Plus Project volumes are shown on **Figure 2**. The study intersections were analyzed using the Synchro 11 software package with *Highway Capacity Manual (HCM)* 6th Edition methodologies. **Table 2** summarizes the vehicle queues with and without the project under Cumulative Conditions. The Synchro worksheets are included as **Attachment C**.

Table 2: Existing Intersection Queues

Existing Intersection Queues							
	Intersection			Existing (EX)		EX + Project	
Intersection	Control	Movement	Storage	AM	PM	AM	PM
1. 11th St/Mission St	TWSC	Westbound	140' (to UPRR)	48'	10'	55'	10'
2. 11th St/N St	TWSC	Eastbound	100' (to UPRR)	0'	0'	0'	0'

Note: 95th percentile queue shown in feet.

All intersection approaches operate acceptably under Existing Conditions with and without the project. The maximum westbound queue length at Mission St/11th St (#1) is less than three vehicles in the AM peak hour and one vehicle in the PM peak hour. The available storage is five to six vehicles and the project would not impact UPRR operations.

SITE ACCESS & CIRCULATION

CCTC reviewed the vesting tentative map shown on **Figure 1**. The project will construct Chick Lane from N Street to Makewe Avenue. No bike lanes are proposed on 11th Street, N Street, or Chick Lane in the County Bikeways Plan. Chick Lane is anticipated to have less than 1,500 vehicles per day under Existing and Cumulative Conditions. Therefore, ten foot travel lanes, eight foot parking lanes and six foot sidewalks consistent with Chick Lane east of the project are recommended. The intersection approaches shall comply with County Standard A-5a and A-5b.

Currently, the N Street approaches are stop controlled at 11th Street. However, the County Traffic Regulation Codes (August 2020) designate the southbound N Street approach as yield controlled (Ordinance 15.50.118)

and there is no designation for the northbound approach. Traffic collision data was obtained from the Statewide Integrated Traffic Records System (SWITRS) for the 11th Street/N Street (#2) intersection. Three collisions with parked vehicles were reported east of the intersection between 2016 and 2020. Two collisions were eastbound head-on collisions due to driving under the influence and one was a westbound rear-end. The available sight distance at the intersection exceeds 35 miles per hour County Standard A-5a. Two-way stop control is the preferred intersection control, and no mitigations are recommended. We recommend the County Traffic Engineer modify the Traffic Regulation Codes to reflect current conditions.

CUMULATIVE CONDITIONS

Cumulative Conditions (2035) represent build-out of the land uses in the region. Cumulative traffic volume forecasts were obtained from the San Miguel Circulation Study & Roadway Improvement Fee Update (GHD, 2020). The project is in traffic analysis zone (TAZ) 207 which included 88 additional single family dwellings and 50 multifamily dwellings under Cumulative Conditions in the circulation study. The single family dwelling growth included TR 2527 just east of the project and TR 2710 just north of the project. TR 2527 and TR 2710 were vested subdivisions with 84 total single family dwelling units of which over 80 have been built and are occupied. This project is parcel one of TR 2527.

Although a portion of this project is likely included in the circulation study, volumes from the project were added the circulation study volumes to be conservative. The Cumulative and Cumulative Plus Project volumes are also shown on **Figure 2**.

No improvements were assumed under Cumulative Conditions. Under Cumulative Conditions, the peak hour factors (PHF) and heavy vehicle (HV) percentages were adjusted to 0.88 and 3% respectively, consistent with the circulation study. However, if the existing PHF or HV% exceeded this value the higher value was used. **Table 3** summarizes the vehicle queues with and without the project under Cumulative Conditions. The Synchro worksheets are included as **Attachment C**.

Table 3: Cumulative Intersection Queues

Cumulative Intersection Queues							
	Intersection			Cumulative (CM)		CM + Project	
Intersection	Control	Movement	Storage	AM	PM	AM	PM
1. 11th St/Mission St	TWSC	Westbound	140' (to UPRR)	55'	55'	60'	63'
2. 11th St/N St	TWSC	Eastbound	100' (to UPRR)	0'	0'	0'	0'
Note: 95th percentile queue shown in feet.							

All queue lengths at both study intersections were less than one vehicle with and without the project under Cumulative Conditions except the westbound approach of 11th Street/Mission Street (#1) which operates at LOS E in the PM peak hour and has a 95th percentile queue length of approximately three vehicles. The available storage is five to six vehicles and the project would not impact UPRR operations. The 11th Street/N Street (#2) intersections operates acceptably.

The intersection meets the peak hour signal warrant in the PM peak hour under Cumulative Conditions as noted in the circulation study. Installation of all-way stop control does not improve the LOS and is not recommended as an interim measure. The project will pay their fair share for the improvement by payment of the San Miguel RIF.

ATTACHMENTS

Attachment A: San Luis Obispo County SB743 Sketch VMT Tool

Attachment B: 2021 Traffic Counts

Attachment C: Synchro Reports

REFERENCES

California Department of Transportation. July 2020. Highway Design Manual, 7th Edition.

_____. 2020, Revision 5. California Manual on Uniform Traffic Control Devices, 2014 Edition.

_____. September 2018. Affordable Housing Trip Generation Strategies and Rates.

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