

October 20, 2020

Mr. Scott M. Behiel, Executive Director
Habitat for Humanity Calaveras
P.O. Box 1469
536 N Main St.
Angels Camp, CA 95222
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**RE: REVISED TRAFFIC OPERATIONAL ASSESSMENT FOR HABITAT FOR HUMANITY
PROJECT IN ANGELS CAMP, CALIFORNIA.**

Dear Mr. Behiel:

Thank you for contacting our firm regarding Habitat for Humanity's proposed project in Angels Camp, California. As we have discussed, the project proposes 107 affordable residential units on a 17-acre site near the SR 49 / Copello Drive intersection. While the City of Angels Camp has determined that the project's traffic impacts are unlikely to be significant, City staff has asked for a focused assessment of the project to respond to Caltrans District 10's July 10, 2020 letter (attached). Our letter report addresses the issues identified by Caltrans, including response to the District's October 14, 2020 letter commenting on the draft report.

Background Information

Project Description. The proposed project is located off of State Route 49 (SR 49) north of its intersection with State Route 4 (SR 4) in the Altaville area of northern Angels Camp. The project will have local access via a driveway on Copello Drive about 850 feet from its intersection with SR 49.

State Route 49 (SR 49). State Route 49 is the primary north-south route in Calaveras County, and SR 49 links the county to Amador, El Dorado, and Placer Counties to the north and Tuolumne, Mariposa, and Madera Counties to the south. SR 49 is part of the Inter-regional Roadway System. In the vicinity of the proposed project North Main Street (SR 49) is designated an Arterial in the Angels Camp General Plan and is a two-lane conventional highway with auxiliary two-way left turn lane or left turn lanes at major intersections. The TWLT lane ends at the Copello Drive intersection. The flow of traffic on SR 49 through Angels Camp is generally governed by the operation of signalized intersections, and the SR 49 / SR 4 (North), SR 49 / Murphys Grade Road / Demarest Street and SR 49 / Stanislaus Avenue intersections are the three currently signalized locations in Angels Camp. Caltrans has plans to replace the traffic signal at SR 4 with a roundabout.

The posted speed limit on SR 49 is 45 mph in the immediate area of the project site, and increases to 55 mph about 400 feet north of Copello Drive.

Caltrans provides *Annual Average Daily Traffic* (AADT) counts for SR 49, and the most recent daily traffic volumes on SR 49 are 7,700 AADT south of Copello Drive and 7,100 AADT north of the

intersection (2018). Caltrans data indicates that trucks comprise 5% of the daily traffic on SR 49 in the study area.

The 2017 Regional Transportation Plan (RTP) identifies a Short Range Roadway Capital project for SR 49 (RTP Table 4.1a). That project involves multi-modal / operational improvements and roundabout installation to five intersections along SR 4 and SR 49 in the north and NW portions of the City. The SR 49 / SR4, SR 49 / Dogtown Road, SR 49 / Clifton Street intersections are involved. Funding for engineering is allocated between 2017 and 2027.

Copello Drive. Copello Drive is a minor street that extends east from SR 49 to provide access to Entenmann's Wholesale Bakery, Copello Square Apartments, and the Church of Christ. The first 550 feet to the apartments access is generally 30 to 36 feet wide. Beyond that point the roadway is gravel.

Foundry Lane. The future alignment of Foundry Lane crosses the southeast corner of the site.

Transit. Calaveras Transit operates six fixed routes (Calaveras Connect) of which three are near the project.

- Red Line – The Red Line travels between Vista del Lago and Columbia College, stopping in Valley Springs, San Andreas, and Angels Camp. Ten daily round-trips are made from 5:50 AM and 7:35 PM.
- Copper Line – The Copper Line travels between Angels Camp and Copperopolis. Four daily trips are made between the hours of 6:40 AM and 7:35 PM.
- Saturday Hopper – An abbreviated service is available on Saturdays with a round-trip route traveling between Valley Springs and Arnold with stops in San Andreas, Angels Camp, and Murphys. This service, called the Saturday Hopper, runs approximately every 90 minutes.

Pedestrian / Bicycle Facilities. Generally, sidewalks along SR 49 in the ¾ mile long area north of SR 4 to Copello Drive are limited to locations where development has been required to construct frontage improvements. Sidewalk exists along the east side of SR 49 across from the project for 300 feet along the Travelodge. On the west side 400 feet of sidewalk was installed with the Tractor Supply Store, and intermittent sidewalks exist along Frog Jump Plaza Shopping Center near the SR 4 intersection. Elsewhere pedestrians and bicyclists share the paved shoulder along SR 49.

SR 49 / Copello Drive intersection. A field review was conducted to observe conditions at the SR 49 / Copello Drive intersection. The intersection is controlled by a stop sign on the Copello Drive approach. The TWLT lane on SR 49 serves as a left turn lane into the site. SR 49 in this area was recently resurfaced, and the pavement within the state right of way and on the immediate Copello Drive approach to the intersection is in good condition. There are no crosswalks striped at this intersection. A streetlight exists on the southwest corner.

The available sight distance at the intersection was reviewed in the field. There is a slight crest vertical curve on SR 49 near the intersection. However, the view from Copello Drive looking north and south onto SR 49 is clear, as the roadway alignment is straight (see attached photo's). The available sight distance measured 15 feet from the edge of the travel way is about 650 feet, which exceeds the minimum

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stopping sight distance requirement for the 45 mph speed limit (i.e., 360 feet¹) and for the 55 mph limit starting further north (i.e., 500 feet). The available sight distance would also satisfy the corner sight distance requirement² at 45 mph (i.e., 500 feet).

Traffic Operations. Current traffic operations at the SR 49 / Copello Drive intersection were evaluated based on Year 2020 traffic volumes. Because current conditions when this report was prepared are influenced by both the travel limitations caused by COVID-19 and the absence of school traffic during summer months, a method was employed to adjust new counts made on July 30, 2020 to create “normal” traffic levels.

1. New a.m. and p.m. peak hour traffic counts were conducted at the SR 49 / Copello Drive intersection.
2. Recent traffic counts made before the COVID shutdown while area schools were in session were obtained for SR 49 intersections further south on SR 49 near the Tractor Supply store (p.m. peak hour) and at Frog Jump Plaza (a.m. peak hour) to identify the normal traffic volume on SR 49 in the area south of the project. It was assumed that the through traffic north of those locations would also occur at the Copello Drive intersection.
3. Trips associated with the Tractor Supply Store were added.
4. Copello Drive traffic was adjusted to reflect traffic for the existing 50-unit Copello Square Apartments under normal conditions.
5. 2020 counts at SR 49 at Copello Drive were balanced to adjusted historic data noted under item 2.

The resulting weekday peak hour traffic volumes are noted in Figure 3.

We tested the Level of Service occurring under these normalized “existing” conditions. The delays for motorists waiting on Copello Drive are indicative of LOS B in the a.m. and p.m. peak hours. The volumes at the intersection fall below the minimum requirements for a traffic signal on a 45 mph road.

| TABLE 1 | | | | | | |
|--|----------------|--------------------------------|------------|--------------------------------|------------|----------------------------------|
| SR 49 / COPELLO DRIVE INTERSECTION OPERATIONS | | | | | | |
| Condition | Control | AM Peak Hour | | PM Peak Hour | | Traffic Signal Warranted? |
| | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS | |
| Existing Conditions | NB Stop | 11.9 | B | 14.0 | B | No |
| Existing Plus Project | | 13.9 | B | 16.1 | C | No |
| Long Term No Project | | 44.8 | E | 40.8 | E | No |
| Long Term Plus Project | | 132.5 | F | 80.8 | F | No |

¹ HDM Table 201.2

² HDM Table 405.1a

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Project Effects

Vehicle Miles Traveled (VMT). Under SB 743 local agencies must move from a Level of Service based approach for CEQA transportation impact analysis to one based on Vehicle Miles Traveled (VMT). Simply stated VMT is the measure of the total distance traveled on the trips generated by a project. The goal of SB 743 is a 15% reduction in total regional VMT. Guidelines developed in the California Governor's Office of Planning and Research (OPR)' December 2018 publication, *Technical Advisory on Evaluating Transportation Impacts in CEQA* provide direction in lieu of analysis methods and significance criteria that may be adopted by local agencies. That direction indicates that the VMT impacts of many types of development should normally be presumed to be less than significant, including:

- Locally serving retail less than 50,000 sf.
- Development along high-quality transit corridors
- Affordable housing

Based on these criteria because the project is affordable the project's transportation impacts based on VMT are not significant.

Identify Project Characteristics. The amount of vehicular traffic caused by the project is expressed in terms of one-way "vehicle trips". The project trip generation estimate is based on published trip generation rates (ITE Trip Generation, 10th Edition) that are commonly accepted by Caltrans and the City of Angels. As noted in Table 2, the project could generate 72 trips in the a.m. peak hour and 90 trips in the p.m. peak hour.

| TABLE 2 TRIP GENERATION ESTIMATE | | | | | | | | |
|---|-----------------|-----------------|------------------------|------------|--------------|---------------------|------------|--------------|
| Land Use | Unit | Quantity | Trips Generated | | | | | |
| | | | AM Peak Hour | | | PM Peak Hour | | |
| | | | In | Out | Total | In | Out | Total |
| <i>Single Family</i> | <i>dwelling</i> | <i>1</i> | 25% | 75% | 0.74 | 63% | 37% | 0.99 |
| Habitat for Humanity | | 65 | 12 | 36 | 48 | 41 | 23 | 64 |
| <i>Multiple Family</i> | <i>dwelling</i> | <i>1</i> | 25% | 75% | 0.56 | 63% | 37% | 0.62 |
| Habitat for Humanity | | 42 | 6 | 18 | 24 | 16 | 10 | 26 |
| Total | Dwellings | 107 | 18 | 54 | 72 | 57 | 33 | 90 |

The directional distribution of project trips will depend on factors such as the locations of schools, shopping and employment centers in this area of Calaveras County. Based on the locations of those land uses and on travel patterns exhibited here and elsewhere in Angels Camps, we expect that 25% of the project's peak hour trips will be oriented north on SR 49 and 75% could be oriented to the south. The resulting trip assignment for project peak hour traffic is also noted in Figure 3.

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Planned Improvements. The project will be required by the City to improve Copello Drive. The necessary pavement section has not yet been determined.

Effects on Traffic Operations. Figure 3 indicates the sum of adjusted 2020 traffic and the trips associated with the proposed project.

Intersection Operation / Safety. As noted in Table 1, the addition of project trips will lengthen delays at the SR 49 / Copello Drive intersection. However projected traffic volumes do not reach the level that satisfies peak hour traffic signal warrants.

The project will increase the number of vehicles using the existing TWLT lane approaching Copello Drive, however, the next southbound left turn movement occurs at the Travelodge driveway about 200 feet away. That distance is adequate to accommodate possible concurrent left turns at each location.

The project will not regularly generate truck traffic, so the adequacy of the intersection for large trucks is not normally a consideration. Some truck traffic could occur during construction, but this activity would be temporary. The radii on the intersection's returns would accommodate normal truck traffic. The pavement section within the state right of way is in good condition, and short-term construction traffic would be unlikely to create the need for immediate maintenance.

Pedestrians / Bicyclists. The project could be expected to generate pedestrian / bicycle activity between the site and destinations south along SR 49. The Mark Twain Center and Angels Food Market are located on the east side of the highway ¼ mile south of Copello Drive, while Frog Jump Plaza on the west side is about ¾ mile to the south of Copello Drive.

Project generated pedestrians would walk or ride along SR 49 using the paved shoulders and intermittent sidewalks that accommodate the limited pedestrian activity that occurs today. While long-term multi-modal improvements to the SR 49 are planned, upgrades to pedestrian and bicycle facilities along the corridor are beyond the responsibility of a single development project and are not recommended.

The extent to which a marked crossing on SR 49 is justified to safely link the site with attractions on the east side was considered. Under the California Vehicle Code a legal crossing exists at public road intersections whether marked or not. Typically, crosswalks are provided to concentrate pedestrians into specific crossings locations. Caltrans District 10 prefers to avoid marked crossings on high speed roads because crosswalks do not force motorists to stop and can give pedestrians a false sense of security. The amount of pedestrian activity at a crossing is a consideration when a marked crossing is being evaluated, and at high speed locations the threshold typically applied (i.e., minimum 20 pedestrians per hour (pph)), also triggers the need for enhancements such as flashing beacons.

In this case, it is unlikely that the project in combination with the existing Copello Square apartments would result in 20 pph. The current pedestrian count in the area between Copello Drive and Angels Market on a weekend is unknown. However, to reach that 20 pph level roughly 60 pedestrians would need to make a round trip (i.e., 120 crossings) over the six-hour period from 10:00 a.m. to 4:00 p.m. on a Saturday. 60 pedestrians would represent roughly one person from 38% of the 157 existing and proposed residences. This level of pedestrian activity seems unlikely.

If a crossing was to be installed, the Copello Drive intersection would be the likely location. While this location is near the transition from a 55 mph to 45 mph speed limit, sidewalk already exists on the east

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side. It is likely that if a marked crossing was installed further south pedestrians would jaywalk to that sidewalk anyway.

The City of Angels and project proponents do not have the authority to install a marked crossing on SR 49, and Caltrans approval would be required. A formal landing area would be required on both sides of the highway, and each landing area would need to be ADA accessible. Appropriate enhancements (i.e., signs / flashers) would also be required.

We recommend that the project proponents be required to construct an enhanced marked crossing if requested by Caltrans.

Similarly, the project could result in pedestrians walking between the site and SR 49 along Copello Drive. Because automobile traffic is not projected to be extensive, a concrete sidewalk is not specifically needed, but an all-weather surface beyond the limits of the normal vehicle travel way is required between the site and SR 49. This recommendation can generally be accommodated by the existing pavement width on Copello Drive from the Copello Square access easterly and will need to be provided in new construction from that point to the project site.

Future Cumulative Traffic Operations

Background. Traffic conditions in the area of the proposed project will change in the future as a result of anticipated development and construction of new roads. In northern Angels Camp the best information regarding long term condition is presented in the *Angels Camp State Route 4 & State Route 49 Gateway and Corridor Study*³. That document included long term traffic volume forecasts that reflect construction of the Foundry Lane Extension linking SR 4 and SR 49 as well as the effects of long term traffic growth based on regional development.

Approach to Traffic Forecasts. Long term traffic volume forecasts are not available for the SR 49 / Copello Drive intersection but are presented for the SR 49 / Foundry Lane intersection located just to the south. Review of the Gateway and Corridor Study indicates that the project site is within the area assumed for development (page 33), and therefore project trips would be included in those forecasts. However, the project site plan includes a connection to the Foundry Lane Extension, and as a result the distribution of project traffic will reflect this new opportunity for travel to the east and south. We estimate that 50% of the site traffic will use the connection.

Figure 4 presents resulting long term forecasts assuming that background through traffic on SR 49 increases as suggested in the Gateway and Corridor Study. The long-term assignment of project trips is also shown.

Results. As indicated in Table 1, because long term traffic volumes on SR 49 north of Angels Camp are projected to increase greatly in the future, the Level of Service at the SR 49 / Copello Drive intersection is projected to deteriorate in the future with and without the Habitat for Humanity project. However, with

³ Angels Camp State Route 4 & State Route 49 Gateway and Corridor Study, Appendix Vol. 2, Transportation Report, Fehr & Peers, 2016.

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the connection to the Foundry Lane Extension the volume of traffic at the intersection will not reach the level that satisfies peak hour traffic signal warrants, and no additional improvements are recommended.

Conclusions / Recommendations

1. The Habitat for Humanity project does not result in a significant Transportation Impact under CEQA relating to VMT.
2. The project could result in pedestrians crossing SR 49 at random locations which could result in a safety impact. While an unmarked crossing legally exists at the Copello Drive intersection, the project proponents should fund an enhanced marked crossing if recommended by Caltrans District 10.
3. The project will create vehicular, pedestrian and bicycle traffic on the unimproved section of Copello Drive beyond the Copello Drive Apartments access. The project proponents should construct a paved roadway with all-weather pedestrian accommodation. A 32-foot paved area consistent with the City of Angels' standard for Minor Street or Arterial Rural section would be appropriate.
4. Under long term conditions the volume of traffic on SR 49 through the Copello Drive intersection will increase whether the Habitat for Humanity project proceeds or not. However, while the Level of Service for traffic waiting at the Copello Drive approach may deteriorate to LOS F, because peak hour traffic signal warrants are not satisfied, a traffic signal is not justified, and no improvements are recommended to address long term conditions at the SR 49 / Copello Drive intersection.

Please feel free to contact us at (916) 660-1555 if you have any questions or need more information.

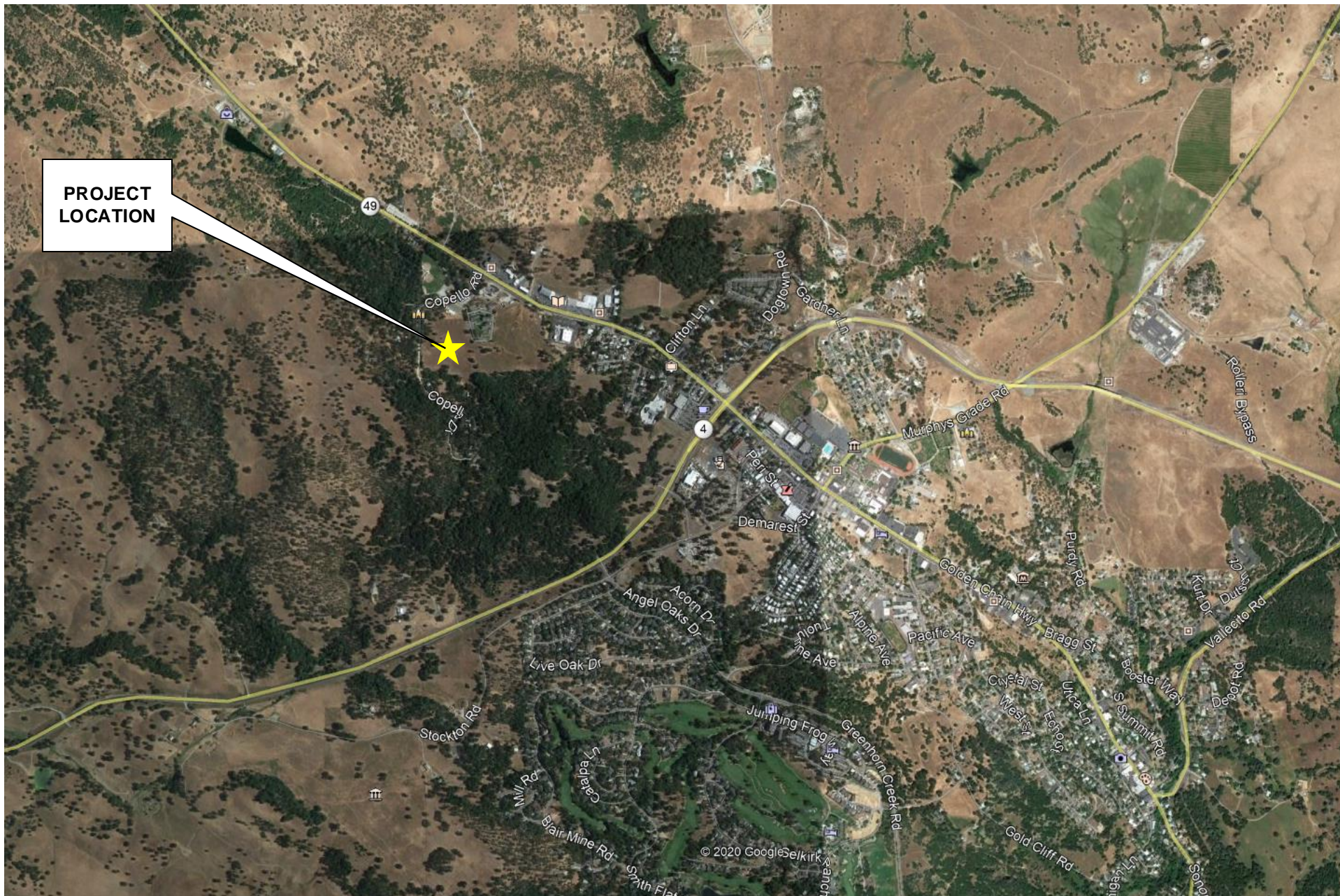
Sincerely yours,

KD Anderson & Associates, Inc.

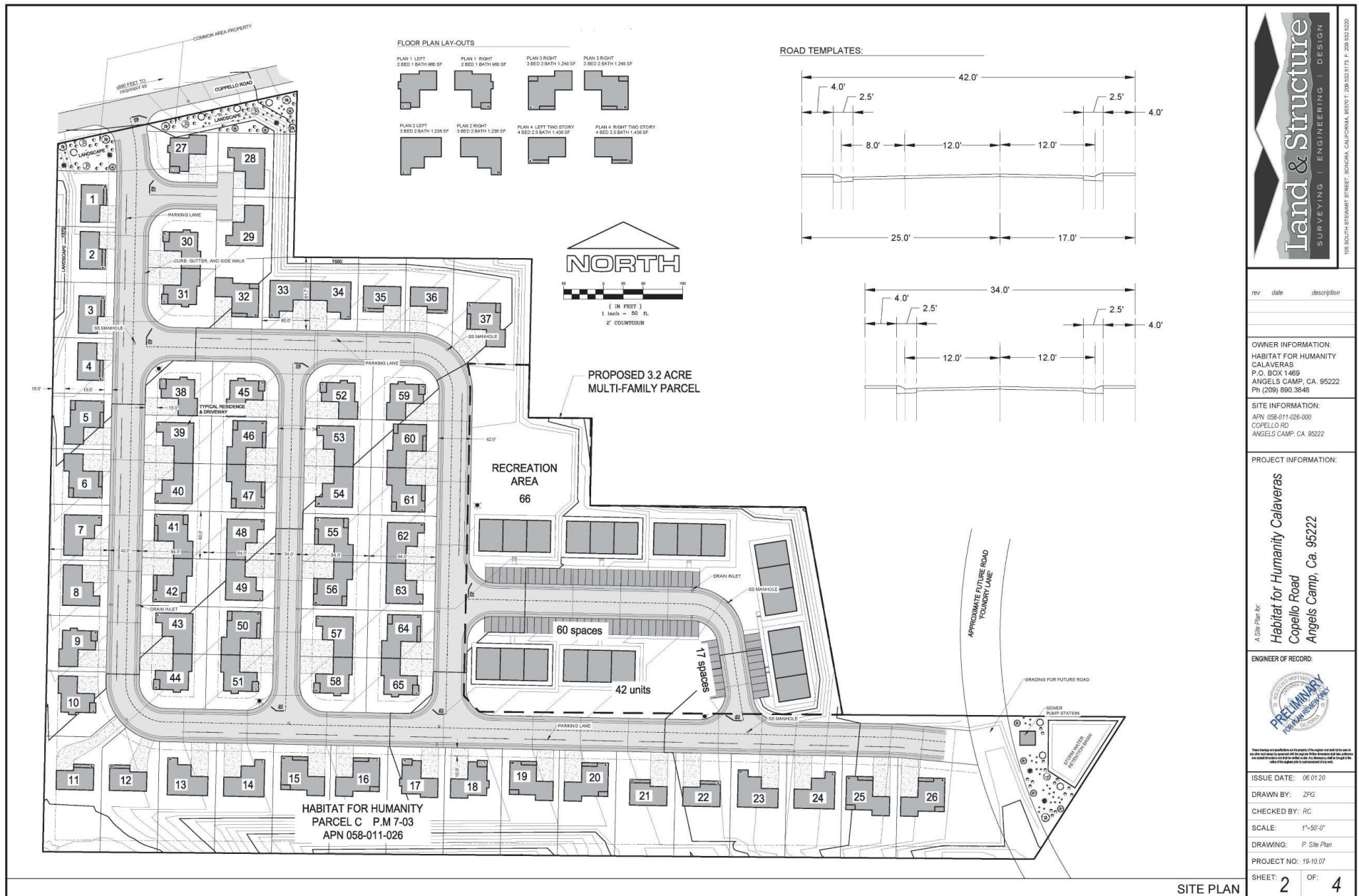
A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

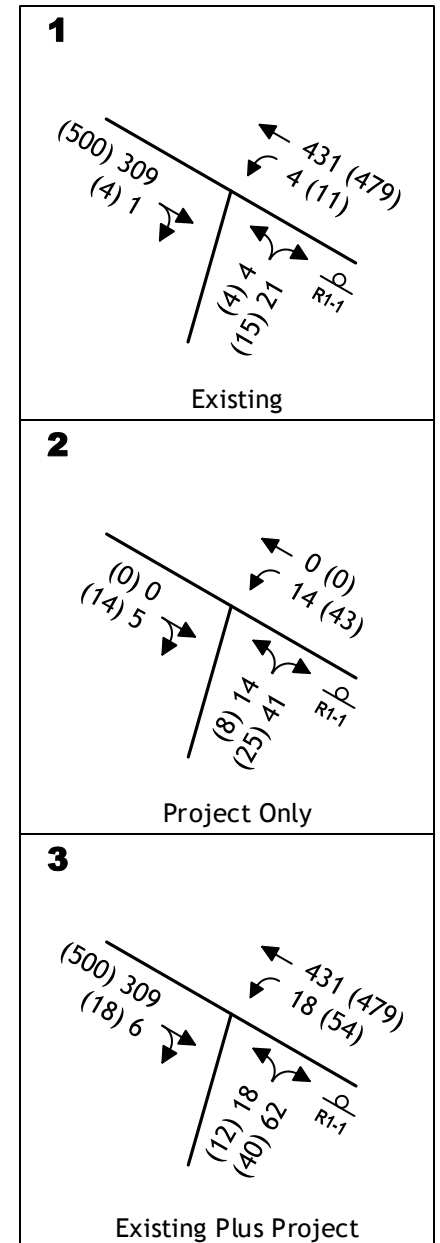
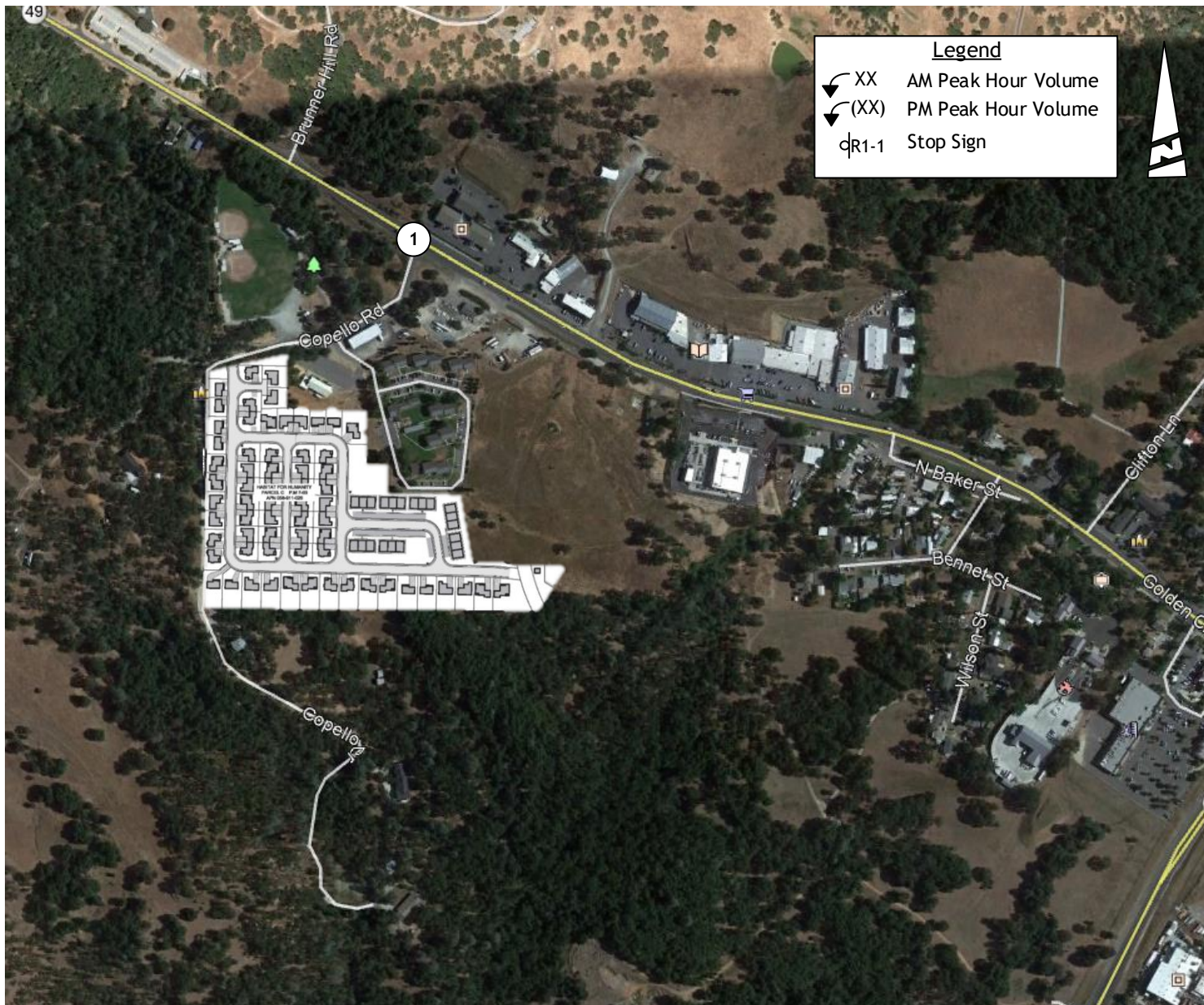
Kenneth D. Anderson, P.E.,
President

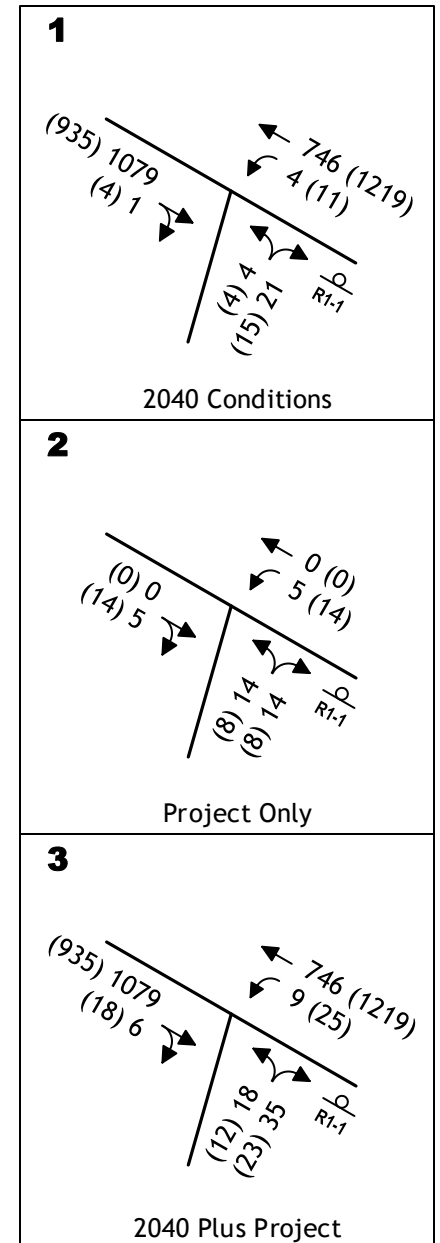
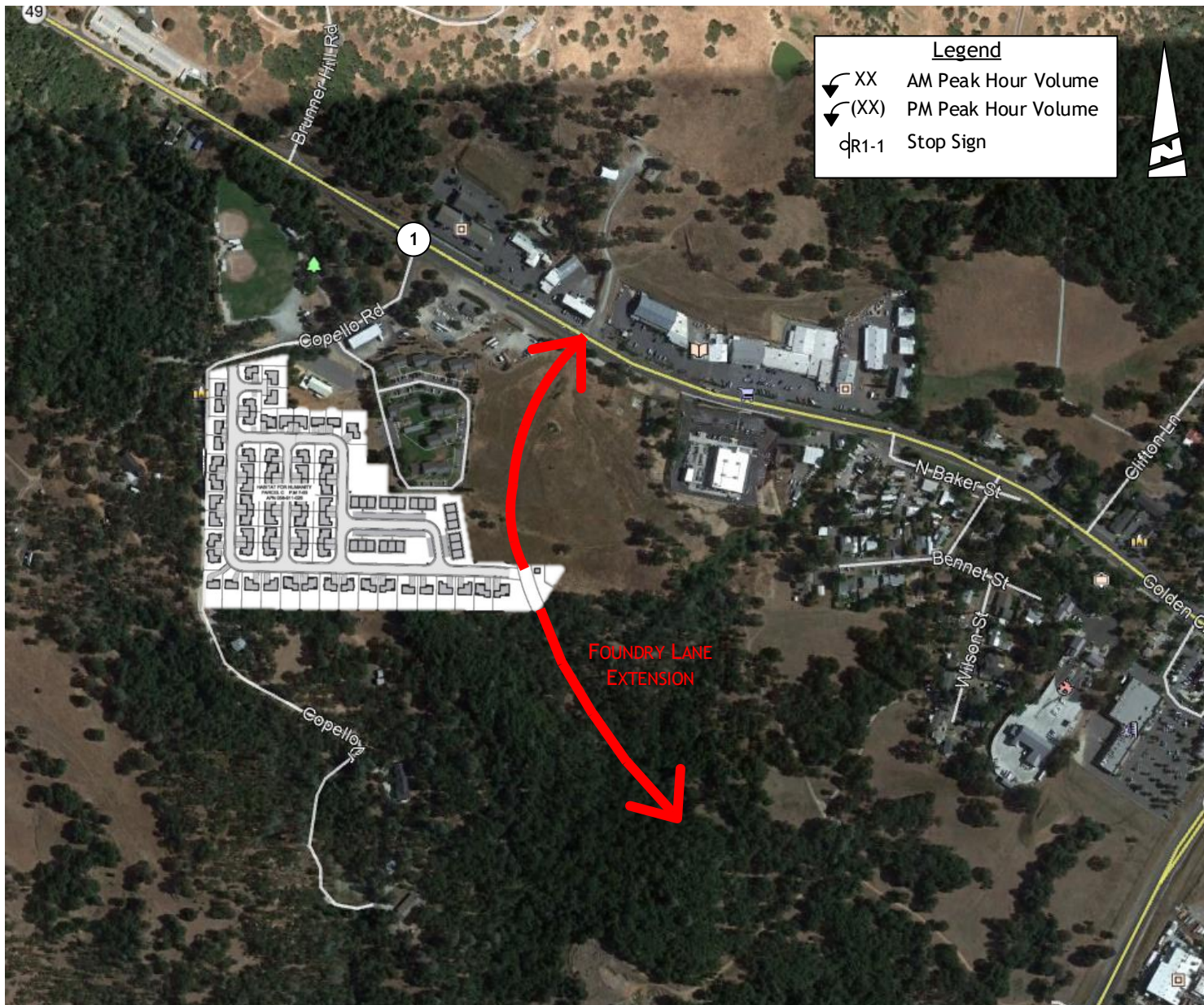
Attachment: Figures, photos, traffic counts, LOS calculations, warrant worksheet



VICINITY MAP











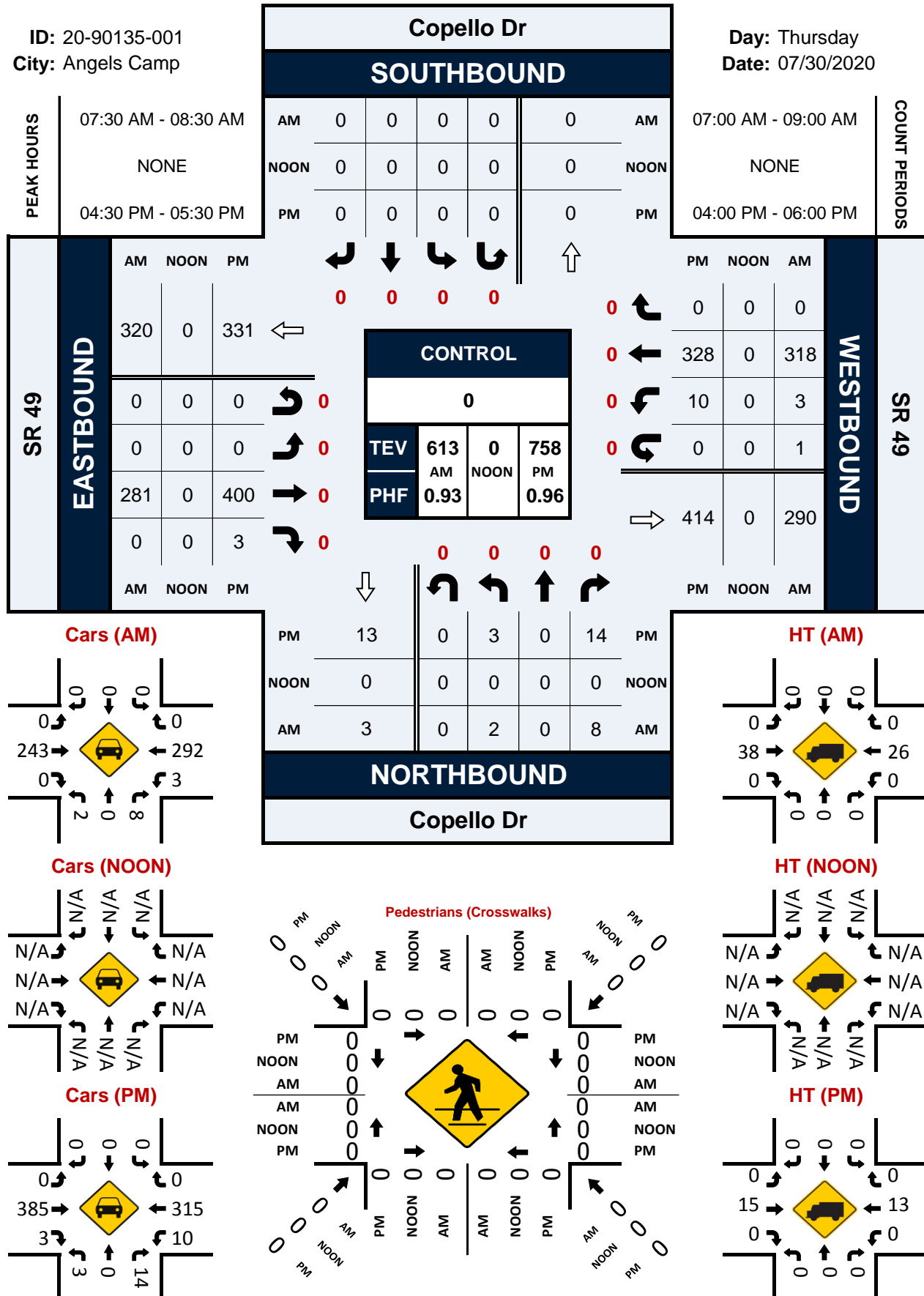
Prepared by National Data & Surveying Services

Copello Dr & SR 49

Peak Hour Turning Movement Count

ID: 20-90135-001
City: Angels Camp

Day: Thursday
Date: 07/30/2020



National Data & Surveying Services

Intersection Turning Movement Count

Location: Copello Dr & SR 49
City: Angels Camp
Control:

Project ID: 20-90135-001
Date: 7/30/2020

| Total | | | | | | | | | | | | | | | | | |
|------------------|---------------------|---------|---------|---------|------------|---------|---------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|-------|
| NS/EW Streets: | Copello Dr | | | | Copello Dr | | | | SR 49 | | | | SR 49 | | | | |
| AM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | TOTAL |
| | 0 NL | 0 NT | 0 NR | 0 NU | 0 SL | 0 ST | 0 SR | 0 SU | 0 EL | 0 ET | 0 ER | 0 EU | 0 WL | 0 WT | 0 WR | 0 WU | |
| 7:00 AM | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 45 | 0 | 0 | 99 |
| 7:15 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 66 | 0 | 0 | 124 |
| 7:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 0 | 1 | 99 | 0 | 0 | 165 |
| 7:45 AM | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 0 | 77 | 0 | 0 | 165 |
| 8:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 0 | 0 | 1 | 82 | 0 | 0 | 141 |
| 8:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 0 | 0 | 1 | 60 | 0 | 1 | 142 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 1 | 63 | 0 | 0 | 130 |
| 8:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 0 | 1 | 62 | 0 | 0 | 118 |
| TOTAL VOLUMES : | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| APPROACH %'s : | 5 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 505 | 0 | 0 | 5 | 554 | 0 | 1 | 1084 |
| | 26.32% | 0.00% | 73.68% | 0.00% | | | | | 0.00% | 100.00% | 0.00% | 0.00% | 0.89% | 98.93% | 0.00% | 0.18% | |
| PEAK HR : | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| PEAK HR VOL : | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 281 | 0 | 0 | 3 | 318 | 0 | 1 | 613 |
| PEAK HR FACTOR : | 0.500 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.846 | 0.000 | 0.000 | 0.750 | 0.803 | 0.000 | 0.250 | 0.929 |
| | 0.500 | | | | | | | | 0.846 | | | | 0.805 | | | | |
| | | | | | | | | | | | | | | | | | |
| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | TOTAL |
| | 0 NL | 0 NT | 0 NR | 0 NU | 0 SL | 0 ST | 0 SR | 0 SU | 0 EL | 0 ET | 0 ER | 0 EU | 0 WL | 0 WT | 0 WR | 0 WU | |
| 4:00 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 3 | 87 | 0 | 0 | 186 |
| 4:15 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 2 | 0 | 4 | 82 | 0 | 0 | 178 |
| 4:30 PM | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 1 | 0 | 6 | 84 | 0 | 0 | 197 |
| 4:45 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 1 | 0 | 1 | 68 | 0 | 0 | 169 |
| 5:00 PM | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | 1 | 0 | 2 | 95 | 0 | 0 | 194 |
| 5:15 PM | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 1 | 81 | 0 | 0 | 198 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 4 | 71 | 0 | 0 | 151 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 1 | 77 | 0 | 0 | 148 |
| TOTAL VOLUMES : | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| APPROACH %'s : | 4 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 727 | 5 | 0 | 22 | 645 | 0 | 0 | 1421 |
| | 18.18% | 0.00% | 81.82% | 0.00% | | | | | 0.00% | 99.32% | 0.68% | 0.00% | 3.30% | 96.70% | 0.00% | 0.00% | |
| PEAK HR : | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| PEAK HR VOL : | 3 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 3 | 0 | 10 | 328 | 0 | 0 | 758 |
| PEAK HR FACTOR : | 0.375 | 0.000 | 0.700 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.917 | 0.750 | 0.000 | 0.417 | 0.863 | 0.000 | 0.000 | 0.957 |
| | 0.607 | | | | | | | | 0.924 | | | | 0.871 | | | | |

National Data & Surveying Services

Intersection Turning Movement Count

Location: Copello Dr & SR 49
City: Angels Camp
Control: 0

Project ID: 20-90135-001
Date: 7/30/2020

| Cars | | | | | | | | | | | | | | | | | |
|------------------|---------------------|---------|---------|---------|------------|---------|---------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|-------|
| NS/EW Streets: | Copello Dr | | | | Copello Dr | | | | SR 49 | | | | SR 49 | | | | |
| AM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | TOTAL |
| | 0 NL | 0 NT | 0 NR | 0 NU | 0 SL | 0 ST | 0 SR | 0 SU | 0 EL | 0 ET | 0 ER | 0 EU | 0 WL | 0 WT | 0 WR | 0 WU | |
| 7:00 AM | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 43 | 0 | 0 | 89 |
| 7:15 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 61 | 0 | 0 | 111 |
| 7:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 0 | 0 | 1 | 95 | 0 | 0 | 150 |
| 7:45 AM | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 0 | 0 | 75 | 0 | 0 | 154 |
| 8:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 1 | 69 | 0 | 0 | 121 |
| 8:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 0 | 1 | 53 | 0 | 1 | 124 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 0 | 1 | 59 | 0 | 0 | 123 |
| 8:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 1 | 56 | 0 | 0 | 108 |
| TOTAL VOLUMES : | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| | 5 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 444 | 0 | 0 | 5 | 511 | 0 | 1 | 980 |
| APPROACH %'s : | 26.32% | 0.00% | 73.68% | 0.00% | | | | | 0.00% | 100.00% | 0.00% | 0.00% | 0.97% | 98.84% | 0.00% | 0.19% | |
| PEAK HR : | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| PEAK HR VOL : | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 243 | 0 | 0 | 3 | 292 | 0 | 1 | 549 |
| PEAK HR FACTOR : | 0.50 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.821 | 0.000 | 0.000 | 0.750 | 0.768 | 0.000 | 0.250 | 0.891 |
| | 0.500 | | | | | | | | 0.821 | | | | 0.771 | | | | |
| | | | | | | | | | | | | | | | | | |
| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | TOTAL |
| | 0 NL | 0 NT | 0 NR | 0 NU | 0 SL | 0 ST | 0 SR | 0 SU | 0 EL | 0 ET | 0 ER | 0 EU | 0 WL | 0 WT | 0 WR | 0 WU | |
| 4:00 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 3 | 84 | 0 | 0 | 180 |
| 4:15 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 2 | 0 | 4 | 71 | 0 | 0 | 164 |
| 4:30 PM | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1 | 0 | 6 | 79 | 0 | 0 | 188 |
| 4:45 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 1 | 0 | 1 | 64 | 0 | 0 | 164 |
| 5:00 PM | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 1 | 0 | 2 | 93 | 0 | 0 | 186 |
| 5:15 PM | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 1 | 79 | 0 | 0 | 192 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 0 | 4 | 67 | 0 | 0 | 143 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 1 | 76 | 0 | 0 | 146 |
| TOTAL VOLUMES : | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| | 4 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 701 | 5 | 0 | 22 | 613 | 0 | 0 | 1363 |
| APPROACH %'s : | 18.18% | 0.00% | 81.82% | 0.00% | | | | | 0.00% | 99.29% | 0.71% | 0.00% | 3.46% | 96.54% | 0.00% | 0.00% | |
| PEAK HR : | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| PEAK HR VOL : | 3 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 385 | 3 | 0 | 10 | 315 | 0 | 0 | 730 |
| PEAK HR FACTOR : | 0.38 | 0.000 | 0.700 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.917 | 0.750 | 0.000 | 0.417 | 0.847 | 0.000 | 0.000 | 0.951 |
| | 0.607 | | | | | | | | 0.924 | | | | 0.855 | | | | |

National Data & Surveying Services

Location: Copello Dr & SR 49

City: Angels Camp

Control: 0

Project ID: 20-90135-001

Date: 7/30/2020

Bikes

[illegible][illegible]

National Data & Surveying Services

Location: Copello Dr & SR 49
City: Angels Camp

Project ID: 20-90135-001
Date: 7/30/2020






Pedestrians (Crosswalks)

| NS/EW Streets: | Copello Dr | | Copello Dr | | SR 49 | | SR 49 | | |
|-----------------------------------|---------------------|---------|------------|---------|----------|---------|----------|---------|------------|
| AM | NORTH LEG | | SOUTH LEG | | EAST LEG | | WEST LEG | | |
| | EB | WB | EB | WB | NB | SB | NB | SB | TOTAL |
| | 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL VOLUMES : APPROACH %'s : | EB 0 | WB 0 | EB 0 | WB 0 | NB 0 | SB 0 | NB 0 | SB 0 | TOTAL 0 |
| PEAK HR : | 07:30 AM - 08:30 AM | | | | | | | | TOTAL |
| PEAK HR VOL : PEAK HR FACTOR : | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| PM | NORTH LEG | | SOUTH LEG | | EAST LEG | | WEST LEG | | TOTAL |
|-----------------------------------|---------------------|---------|-----------|---------|----------|---------|----------|---------|------------|
| | EB | WB | EB | WB | NB | SB | NB | SB | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL VOLUMES : APPROACH %'s : | EB 0 | WB 0 | EB 0 | WB 0 | NB 0 | SB 0 | NB 0 | SB 0 | TOTAL 0 |
| PEAK HR : | 04:30 PM - 05:30 PM | | 0 | 0 | 0 | 0 | 0 | 0 | TOTAL 0 |
| PEAK HR VOL : | 0 | 0 | | | | | | | |
| PEAK HR FACTOR : | | | | | | | | | |

Intersection

Int Delay, s/veh 0.4

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|--|
| Lane Configurations |  | |  |  |  |  |
| Traffic Vol, veh/h | 309 | 1 | 4 | 431 | 4 | 21 |
| Future Vol, veh/h | 309 | 1 | 4 | 431 | 4 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 386 | 1 | 5 | 539 | 5 | 26 |





| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 387 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1171 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1171 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 11.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 550 | - | - | 1171 | - |
| HCM Lane V/C Ratio | 0.057 | - | - | 0.004 | - |
| HCM Control Delay (s) | 11.9 | - | - | 8.1 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

Intersection

Int Delay, s/veh 0.4

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|------|
| Lane Configurations |  | |  |  |  | |
| Traffic Vol, veh/h | 500 | 4 | 11 | 479 | 4 | 15 |
| Future Vol, veh/h | 500 | 4 | 11 | 479 | 4 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 543 | 4 | 12 | 521 | 4 | 16 |





| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 547 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1022 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1022 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.2 | 13.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 423 | - | - | 1022 | - |
| HCM Lane V/C Ratio | 0.049 | - | - | 0.012 | - |
| HCM Control Delay (s) | 13.9 | - | - | 8.6 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

Intersection

Int Delay, s/veh 1.5

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|------|
| Lane Configurations |  | |  |  |  | |
| Traffic Vol, veh/h | 309 | 6 | 18 | 431 | 18 | 62 |
| Future Vol, veh/h | 309 | 6 | 18 | 431 | 18 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 386 | 8 | 23 | 539 | 23 | 78 |





| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 394 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1165 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1165 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0 | 0.3 | 14 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 500 | - | - | 1165 | - |
| HCM Lane V/C Ratio | 0.2 | - | - | 0.019 | - |
| HCM Control Delay (s) | 14 | - | - | 8.2 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 0.1 | - |

Intersection

Int Delay, s/veh 1.2

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|------|
| Lane Configurations |  | |  |  |  | |
| Traffic Vol, veh/h | 500 | 18 | 54 | 479 | 12 | 40 |
| Future Vol, veh/h | 500 | 18 | 54 | 479 | 12 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 543 | 20 | 59 | 521 | 13 | 43 |






| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 563 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 1008 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1008 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.9 | 16.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 381 | - | - | 1008 | - |
| HCM Lane V/C Ratio | 0.148 | - | - | 0.058 | - |
| HCM Control Delay (s) | 16.1 | - | - | 8.8 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.5 | - | - | 0.2 | - |

Intersection

Int Delay, s/veh 0.6

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|--|
| Lane Configurations |  | |  |  |  |  |
| Traffic Vol, veh/h | 1079 | 1 | 4 | 746 | 4 | 21 |
| Future Vol, veh/h | 1079 | 1 | 4 | 746 | 4 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1349 | 1 | 5 | 933 | 5 | 26 |





| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 1350 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | - |
| Pot Cap-1 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 44.8 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|------|-----|
| Capacity (veh/h) | 121 | - | - | 510 | - |
| HCM Lane V/C Ratio | 0.258 | - | - | 0.01 | - |
| HCM Control Delay (s) | 44.8 | - | - | 12.1 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 0 | - |

Intersection

Int Delay, s/veh 0.4

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|------|
| Lane Configurations |  | |  |  |  | |
| Traffic Vol, veh/h | 935 | 4 | 11 | 1219 | 4 | 15 |
| Future Vol, veh/h | 935 | 4 | 11 | 1219 | 4 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1016 | 4 | 12 | 1325 | 4 | 16 |






| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 1020 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 680 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 680 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 40.8 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 121 | - | - | 680 | - |
| HCM Lane V/C Ratio | 0.171 | - | - | 0.018 | - |
| HCM Control Delay (s) | 40.8 | - | - | 10.4 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.6 | - | - | 0.1 | - |

Intersection

Int Delay, s/veh 3.7

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|--|
| Lane Configurations |  | |  |  |  |  |
| Traffic Vol, veh/h | 1079 | 6 | 9 | 746 | 18 | 35 |
| Future Vol, veh/h | 1079 | 6 | 9 | 746 | 18 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1349 | 8 | 11 | 933 | 23 | 44 |






| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 1357 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 507 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 507 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|-------|
| HCM Control Delay, s | 0 | 0.1 | 132.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 84 | - | - | 507 | - |
| HCM Lane V/C Ratio | 0.789 | - | - | 0.022 | - |
| HCM Control Delay (s) | 132.5 | - | - | 12.3 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 4 | - | - | 0.1 | - |

Intersection

Int Delay, s/veh 1.4

| Movement | EBT | EBR | WBL | WBT | NEL | NER |
|--------------------------|---|------|---|---|---|--|
| Lane Configurations |  | |  |  |  |  |
| Traffic Vol, veh/h | 935 | 18 | 25 | 1219 | 12 | 23 |
| Future Vol, veh/h | 935 | 18 | 25 | 1219 | 12 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 200 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1016 | 20 | 27 | 1325 | 13 | 25 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 1036 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.218 |
| Pot Cap-1 Maneuver | - | - | 671 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 671 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NE |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.2 | 80.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NELn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|------|-----|
| Capacity (veh/h) | 83 | - | - | 671 | - |
| HCM Lane V/C Ratio | 0.458 | - | - | 0.04 | - |
| HCM Control Delay (s) | 80.8 | - | - | 10.6 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.9 | - | - | 0.1 | - |

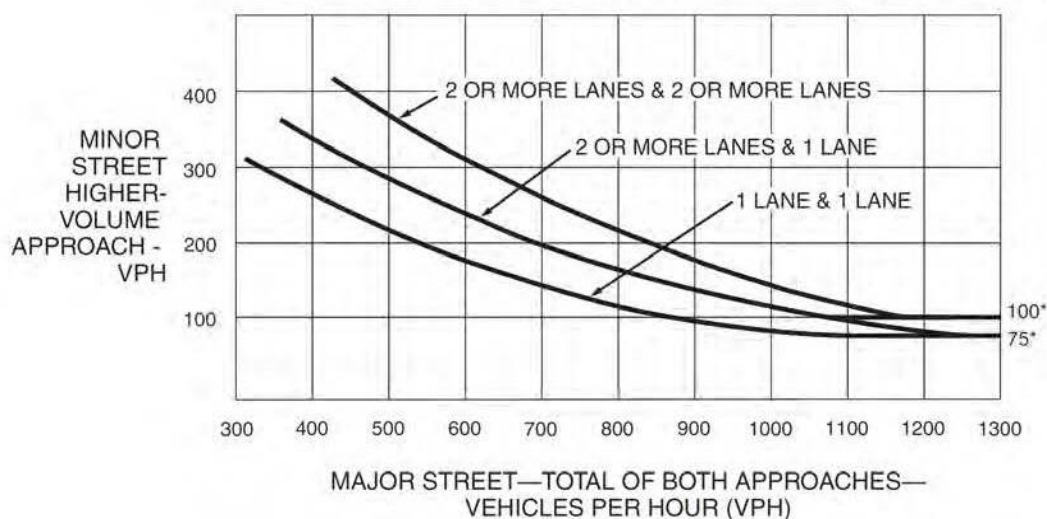
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SR 49 – COPELLO RD : CUMULATIVE PLUS PROJECT

AM (●) : MAJOR 1840 MINOR 53
PM (■) : MAJOR 2197 MINOR 35