# Traffic Impact Study <br> Everett Street Terraces Project <br> City of Moorpark, California <br> February 17, 2016 

Prepared for:
Everett Street Terraces
1001 Newbury Road
Thousand Oaks, CA 91320

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## APPENDIX

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TRAFFIC IMPACT STUDY

## Everett Street Terraces Project

City of Moorpark, California
February 17, 2016

### 1.0 InTRODUCTION

This traffic analysis has been conducted to identify and evaluate the potential traffic impacts generated by the proposed Everett Street Terraces project. The proposed project is located on the north side of Everett Street, east of Moorpark Avenue in the City of Moorpark, California. The proposed project site location and general vicinity are shown in Figure 1-1.

The traffic analysis follows City of Moorpark traffic study guidelines (i.e., Guidelines for Preparing Traffic and Circulation Studies, 1993). This traffic analysis evaluates the potential project-related traffic impacts associated with the proposed development at eight key intersections in the vicinity of the project site. The study intersections were determined in consultation with the City of Moorpark staff. The Intersection Capacity Utilization (ICU) method was used to determine volume-to-capacity ratios and corresponding Levels of Service (LOS) at the study intersections.

This study (i) presents existing traffic volumes, (ii) forecasts existing plus project traffic volumes, (iii) determines project-related impacts, (iv) forecasts cumulative future traffic volumes with the related projects and the proposed project, and (v) provides fair-share calculations toward cumulative mitigation measures, where appropriate.


MAP SOURCE: RAND MCNALLY \& COMPANY
PROJECT SITE

- STUDY INTERSECTION
$\square$ REVIEW FOR SIGNAL WARRANTS
FIGURE 1-1 VICINITY MAP
r


### 2.0 Project Description

### 2.1 Site Location

The proposed project is located on the north side of Everett Street, east of Moorpark Avenue in the City of Moorpark. The project site is bounded by residential uses to the north and east, Everett Street to the south, and Moorpark Avenue to the west.

### 2.2 Existing Project Site

The project site is located at the northeast corner of the Everett Street/Moorpark Avenue intersection. The overall project site comprises approximately 2 acres and a portion of the site was previously occupied by six single-family homes. The six existing single-family homes have been removed to accommodate the proposed project.

### 2.3 Proposed Project Description

The Everett Street Terraces project consists of the development of a residential condominium complex with 60 dwelling units. The condominium complex will consist of 2-bedroom and 3bedroom units. The site plan for the proposed project is illustrated in Figure 2-1.


## FIGURE 2-1 <br> PROJECT SITE PLAN

### 3.0 Site Access and Circulation

The site access scheme for the proposed project is displayed in Figure 2-1. Descriptions of the existing site access and proposed project site access and circulation schemes are provided in the following subsections.

### 3.1 Existing Site Access

Vehicular access to the existing project site is presently provided via multiple access points on Everett Street and Moorpark Avenue along the project frontage. Two driveways are currently provided on the east side of Moorpark Avenue, which borders the project site to the west. Two driveways are currently provided on the north side of Everett Street, which borders the project site to the south. All existing project driveways currently accommodate left-turn and right-turn ingress and egress turning movements.

### 3.2 Proposed Project Site Access and Circulation

The proposed project site access scheme is displayed in Figure 2-1. Vehicular access to the project will be provided via one driveway on the north side of Everett Street at the most easterly portion of the project site.

### 4.0 Existing Street System

### 4.1 Regional Highway System

Regional access to the project site is provided by the State Route 118 (Ronald Reagan) Freeway and State Route 23 (Moorpark) Freeway, as shown in Figure 1-1. Full freeway ramp connections are provided on both the State Route 118 and State Route 23 Freeways at Los Angeles Avenue. Brief descriptions of the State Route 118 Freeway and State Route 23 Freeway are provided in the following paragraphs.

State Route 118 (Ronald Reagan) Freeway is a major freeway connecting Moorpark with the San Fernando Valley and the Los Angeles Basin. In the vicinity of the project, the State Route 118 Freeway provides two travel lanes in each direction. Both northbound and southbound ramps are provided on State Route 118 at Los Angeles Avenue.

State Route 23 (Moorpark) Freeway extends from the junction with the State Route 118 Freeway southerly to the US-101 (Ventura) Freeway in the City of Thousand Oaks. State Route 23 Freeway provides two to three travel lanes in each direction in the vicinity of the project. Both northbound and southbound ramps are provided on State Route 23 at Los Angeles Avenue.

### 4.2 Local Street System

Immediate access to the project site is provided via Everett Street. The following eight study intersections were selected by City of Moorpark staff for analysis of potential impacts related to the proposed project:

1. Walnut Canyon Road-Moorpark Avenue / Casey Road
2. Moorpark Avenue / Everett Street
3. Moorpark Avenue / Charles Street
4. Moorpark Avenue / High Street
5. Moorpark Avenue / Poindexter Avenue - $1^{\text {st }}$ Street
6. Walnut Street / High Street
7. Spring Road / Charles Street
8. Spring Road / High Street - Princeton Avenue

Five of the eight study intersections selected for analysis are currently controlled by traffic signals. The remaining three intersections - Moorpark Avenue/Everett Street, Moorpark Avenue/Charles Street and Walnut Street/High Street - are currently controlled by stop signs. The existing lane configurations at the eight study intersections are displayed in Figure 4-1.


### 4.3 Roadway Descriptions

Brief descriptions of the important roadways in the project site vicinity are provided in the following paragraphs.

Moorpark Avenue is a north-south roadway that borders the project site to the west. One through travel lane is provided in each direction on Moorpark Avenue in the project vicinity. North of Casey Road, Moorpark Avenue becomes Walnut Canyon Road. South of Los Angeles Avenue, Moorpark Avenue terminates just north of the Arroyo Simi. Exclusive left-turn lanes are provided in the northbound direction at the Casey Road intersection and in both directions at the Poindexter Avenue, High Street, and Charles Street intersections. A separate right-turn lane is provided in the northbound direction on Moorpark Avenue at the High Street intersection. Curbside parking is prohibited along both sides of Moorpark Avenue in the project vicinity. Moorpark Avenue is posted for a 30 miles per hour speed limit near the project site. Moorpark Avenue/Walnut Canyon Road is a State highway (SR-23).

Walnut Street is a north-south roadway that is located east of the project site. Walnut Street extends from Everett Street on the north to High Street on the south. One through travel lane is provided in each direction on Walnut Street in the project vicinity. Parking is allowed along both sides of Walnut Street in the project vicinity, except between Charles Street and High Street where two-hour angled parking is provided from 9:00 AM to 9:00 PM along both sides of the street. There is no posted speed limit on Walnut Street within the project study area, thus it is assumed to be a prima facie speed limit of 25 miles per hour.

Spring Road is a north-south roadway that is located east of the project site. Spring Road extends from Tierra Rejada Road on the south to Walnut Canyon Road on the north. Two through travel lanes are provided in each direction on Spring Road north of Los Angeles Avenue. South of Los Angeles Avenue, one through travel lane is provided in each direction on Spring Road. Exclusive left-turn lanes are provided on Spring Road at the High Street and Charles Street intersections. Curbside parking is prohibited along both sides of Spring Road in the project vicinity. Spring Road is posted for a 45 miles per hour speed limit north of High Street Princeton Avenue and a 40 miles per hour speed limit south of High Street - Princeton Avenue near the project site.

Casey Road is an east-west roadway that is located north of the project site. One through travel lane is provided in each direction on Casey Road in the project vicinity. Separate left-turn and right-turn lanes are provided in the eastbound direction on Casey Road at the Moorpark Avenue intersection. Casey Road is posted for a 25 miles per hour speed limit near the project site.

Charles Street is an east-west roadway that is located south of the project site. One through travel lane is provided in each direction on Charles Street in the project vicinity. Curbside parking is allowed along both sides of Charles Street within the project study area. Charles Street is posted for a 25 miles per hour speed limit near the project site.

High Street is an east-west roadway that is located south of the project site. High Street extends from Spring Road on the east to just west of Moorpark Avenue. East of Spring Road, High Street becomes Princeton Avenue. One through travel lane is provided in each direction on High Street in the project vicinity. An exclusive left turn lane is provided in eastbound on High Street at the Spring Road intersection. An exclusive westbound right-turn lane is provided on High Street at the Moorpark Avenue intersection and in the eastbound direction at the Spring Road intersection. Two-hour parking is provided from 6:00 AM to 6:00 PM along both sides of High Street in the project vicinity. High Street is posted for a 30 miles per hour speed limit near the project site.

Princeton Avenue is an east-west roadway that is located south of the project site. Princeton Avenue extends from Spring Road on the west to Campus Park Drive to the east. West of Spring Road, Princeton Avenue becomes High Street. One through travel lane is provided in each direction on Princeton Avenue in the project vicinity. Exclusive left-turn and right-turn lanes are provided in the westbound direction of Princeton Avenue at the Spring Road intersection. Curbside parking is prohibited along both sides of Princeton Avenue in the project vicinity. Princeton Avenue is posted for a 40 miles per hour speed limit near the project site.

Poindexter Avenue is an east-west roadway that is located south of the project site. One through travel lane is provided in each direction on Poindexter Avenue in the project vicinity. Exclusive left turn lanes are provided in both directions on Poindexter Avenue at the Moorpark Avenue intersection. An exclusive eastbound right-turn lane is provided on Poindexter Avenue at the Moorpark Avenue intersection. Curbside parking is prohibited along both sides of Poindexter Avenue in the project vicinity. Poindexter Avenue is posted for 40 miles per hour speed limit near the project site.

### 4.4 Existing Public Bus Transit Service

Public bus transit service in the project study area is currently provided by the Moorpark City Transit. A summary of the existing transit routes, including the transit route, destinations and peak hour headways is presented in Table 4-1. The existing public transit routes in the proposed project site vicinity are illustrated in Figure 4-2.

Table 4-1
EXISTING TRANSIT ROUTES [1]

| ROUTE | DESTINATIONS | ROADWAY NEAR SITE | NO. OF BUSES DURING PEAK HOUR |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | DIR | AM | PM |
| Moorpark City Transit Route 1 | Civic Center, Town Center, Mission Bell Plaza, Peach Hill Park, Virginia Colony Park, and Moorpark College | High Street, Moorpark Avenue and Spring Road | $\begin{gathered} \text { EB } \\ \text { WB } \end{gathered}$ | 1 | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |
| Moorpark City Transit Route 2 | Civic Center, Moorpark Marketplace, Moorpark College, and Country Trail Park | High Street, Moorpark Avenue and Spring Road | $\begin{gathered} \text { EB } \\ \text { WB } \end{gathered}$ | 1 | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |

[1] Source: Moorpark City Transit, City of Moorpark Website.

$\star$ Project site
FIGURE 4-2 EXISTING PUBLIC TRANSIT ROUTES

### 5.0 TRAFFIC COUNTS

Manual counts of vehicular turning movements were conducted at each of the eight study intersections during the weekday morning (AM) and afternoon (PM) commuter periods to determine the peak hour traffic volumes. The manual counts were conducted by a traffic count subconsultant at the eight study intersections from 7:00 to 9:00 AM to determine the AM peak commuter hour, and from 4:00 to 6:00 PM to determine the PM peak commuter hour. Traffic volumes at the study intersections show the typical peak periods between 7:00 to 9:00 AM and 4:00 to 6:00 PM generally associated with weekday peak commuter hours.

In order to account for area-wide growth and represent conditions in the existing year, the traffic count data from 2013 was increased by a two $(2.0 \%)$ annual traffic growth rate through the year 2016. The application of this growth factor allows for a conservative forecast of existing volumes in the project study area.

Moreover, it should be noted that Moorpark Avenue is heavily utilized as a truck route. Therefore, the traffic volumes along Moorpark Avenue were adjusted to account for truck traffic during the AM and PM peak hours. It is estimated that trucks represent approximately 15 percent ( $15 \%$ ) and 10 percent ( $10 \%$ ) of the AM and PM peak hour traffic volumes, respectively, on Moorpark Avenue. The percentage of trucks, as well as a passenger car equivalent (PCE) factor of 3.0 was utilized to adjust the traffic volumes to reflect truck traffic along Moorpark Avenue.

The existing weekday AM and PM peak hour traffic volumes at the eight study intersections are summarized in Table 5-1. The existing traffic volumes at the study intersections during the AM and PM peak hours are shown in Figures 5-1 and 5-2, respectively. Summary data worksheets of the manual traffic counts at the study intersections are contained in Appendix $A$.

Table 5-1
EXISTING TRAFFIC VOLUMES [1]

|  |  |  |  | AM PEAK HOUR |  | PM PEAK HOUR |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NO. | INTERSECTION | DATE | DIR | BEGAN | VOLUME [2] | BEGAN | VOLUME [2] |
| 1 | Walnut Canyon RoadMoorpark Avenue/ Casey Road | 06/12/2013 | NB <br> SB <br> EB <br> WB | 7:45 | $\begin{array}{r} 495 \\ 349 \\ 287 \\ 0 \end{array}$ | 4:30 | $\begin{array}{r} 309 \\ 207 \\ 61 \\ 0 \\ \hline \end{array}$ |
| 2 | Moorpark Avenue/ Everett Street | 06/12/2013 | $\begin{gathered} \text { NB } \\ \text { SB } \\ \text { EB } \\ \text { WB } \\ \hline \end{gathered}$ | 7:30 | $\begin{array}{r} 564 \\ 640 \\ 0 \\ 18 \end{array}$ | 4:30 | $\begin{array}{r} 330 \\ 277 \\ 0 \\ 15 \end{array}$ |
| 3 | Moorpark Avenue/ Charles Street | 06/12/2013 | $\begin{aligned} & \text { NB } \\ & \text { SB } \\ & \text { EB } \\ & \text { WB } \end{aligned}$ | 7:45 | $\begin{array}{r} 577 \\ 611 \\ 6 \\ 46 \\ \hline \end{array}$ | 4:30 | $\begin{array}{r} 356 \\ 280 \\ 38 \\ 36 \end{array}$ |
| 4 | Moorpark Avenue/ High Stret | 06/12/2013 | $\begin{gathered} \text { NB } \\ \text { SB } \\ \text { EB } \\ \text { WB } \\ \hline \end{gathered}$ | 7:30 | $\begin{array}{r} 615 \\ 548 \\ 41 \\ 386 \\ \hline \end{array}$ | 4:30 | $\begin{aligned} & 686 \\ & 291 \\ & 144 \\ & 381 \\ & \hline \end{aligned}$ |
| 5 | Moorpark Avenue/ <br> Poindexter Avenue | 06/12/2013 | $\begin{array}{r} \text { NB } \\ \text { SB } \\ \text { EB } \\ \text { WB } \\ \hline \end{array}$ | 7:30 | $\begin{array}{r} 488 \\ 640 \\ 324 \\ 49 \\ \hline \end{array}$ | 4:30 | $\begin{array}{r} 466 \\ 580 \\ 391 \\ 41 \end{array}$ |
| 6 | Walnut Street/ High Street | 06/12/2013 | $\begin{gathered} \text { NB } \\ \text { SB } \\ \text { EB } \\ \text { WB } \\ \hline \end{gathered}$ | 7:30 | $\begin{array}{r} 0 \\ 24 \\ 344 \\ 382 \\ \hline \end{array}$ | 4:30 | $\begin{array}{r} 0 \\ 45 \\ 476 \\ 396 \end{array}$ |
| 7 | Spring Road/ Charles Street | 06/12/2013 | $\begin{aligned} & \text { NB } \\ & \text { SB } \\ & \text { EB } \\ & \text { WB } \\ & \hline \end{aligned}$ | 7:15 | $\begin{array}{r} 396 \\ 959 \\ 64 \\ 72 \end{array}$ | 4:30 | $\begin{array}{r} 946 \\ 542 \\ 59 \\ 31 \\ \hline \end{array}$ |
| 8 | Spring Road/ <br> High Street- <br> Princeton Avenue | 06/12/2013 | $\begin{aligned} & \text { NB } \\ & \text { SB } \\ & \text { EB } \\ & \text { WB } \end{aligned}$ | 7:45 | $\begin{aligned} & 636 \\ & 971 \\ & 329 \\ & 437 \\ & \hline \end{aligned}$ | 4:30 | $\begin{aligned} & 880 \\ & 575 \\ & 461 \\ & 686 \\ & \hline \end{aligned}$ |

[1] Counts conducted by The Traffic Solution
[2] Traffic count data from 2013 was increased by a $2.0 \%$ annual traffic growth rate through the year 2016.

$\square / \triangle$ PROJECT SITE

(Z/A PROJECT SIte
FIGURE 5-2
N
NOT TO SCALE

### 6.0 Project Trip Generation

Traffic volumes expected to be generated by the proposed project during the AM and PM peak hours, as well as on a daily basis, were estimated using rates published in the Institute of Transportation Engineers' (ITE) Trip Generation manual, 9 ${ }^{\text {th }}$ Edition, 2012. Traffic volumes expected to be generated by the proposed project were based upon number of dwelling units. ITE Land Use Code 230 (Residential Condominium) trip generation average rates were used to forecast the traffic volumes expected to be generated by the proposed project.

Traffic volumes expected to be generated by the prior uses located on the project site were also estimated using rates published in the ITE Trip Generation manual. ITE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates were used to forecast the traffic volumes generated by the prior single family homes located on the project site.

The trip generation forecast for the proposed project is summarized in Table 6-1. As presented in Table 6-1, the proposed project is expected to generate a net increase of 21 vehicle trips (3 inbound trips and 18 outbound trips) during the AM peak hour. During the PM peak hour, the proposed project is expected to generate a net increase of 25 vehicle trips ( 17 inbound trips and 8 outbound trips). Over a 24 -hour period, the proposed project is forecast to generate a net increase of 292 daily trip ends during a typical weekday (146 inbound trips and 146 outbound trips).

Table 6-1

## PROJECT TRIP GENERATION [1]

23-Feb-16

| LAND USE | SIZE | DAILYTRIP ENDS [2]VOLUMES | AM PEAK HOUR VOLUMES [2] |  |  | PM PEAK HOUR VOLUMES [2] |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Proposed Use |  |  |  |  |  |  |  |  |
| Condominiums [3] |  | 349 | 4 | 22 | 26 | 21 | 10 | 31 |
| Existing Use | (6) DU | (57) | (1) | (4) | (5) | (4) | (2) | (6) |
| Single Family Houses [4] |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | - |  |
| NET INCREASE |  | 292 | 3 | 18 | 21 | 17 | 8 | 25 |

[1] Source: ITE "Trip Generation", 9th Edition, 2012.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 230 (Residential Condo/Townhouse) trip generation average rates.

- Daily Trip Rate: 5.81 trips/dwelling unit; $50 \%$ inbound $/ 50 \%$ outbound
- AM Peak Hour Trip Rate: 0.44 trips/dwelling unit; $17 \%$ inbound $/ 83 \%$ outbound
- PM Peak Hour Trip Rate: 0.52 trips/dwelling unit; $67 \%$ inbound $/ 33 \%$ outbound
[4] ITE Land Use Code 210 (Single Family Detached Housing) trip generation average rates.
- Daily Trip Rate: 9.52 trips/dwelling unit; $50 \%$ inbound $/ 50 \%$ outbound
- AM Peak Hour Trip Rate: 0.75 trips/dwelling unit; assume $25 \%$ inbound $/ 75 \%$ outbound
- PM Peak Hour Trip Rate: 1.00 trips/dwelling unit; $63 \%$ inbound $/ 37 \%$ outbound


### 7.0 PROJECT TRIP DISTRIBUTION

Project generated traffic was assigned to the local roadway system based on a traffic distribution pattern which accounted for the proposed project land uses, the existing and planned project site access schemes, existing traffic patterns, characteristics of the surrounding roadway system, and nearby population and employment centers.

The project traffic volume distribution percentages during AM and PM peak hours at the eight study intersections are illustrated in Figure 7-1. The forecast project traffic volumes at the study intersections for the AM and PM peak hours are displayed in Figures 7-2 and 7-3, respectively.




### 8.0 Cumulative Development Projects

Future Cumulative traffic counts at five of the eight study intersections are provided from a recent traffic study prepared for a nearby project ${ }^{1}$ in the City of Moorpark. A forecast of onstreet traffic conditions prior to occupancy of the proposed project is identified by incorporating the potential trips associated with other known development projects (related projects) in the area. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. The supplemental future cumulative traffic count figure is provided in Appendix $\boldsymbol{B}$.

Furthermore, related projects research based on information on file at the City of Moorpark Community Development Department, as well as recently approved traffic impact studies prepared for projects in the vicinity of the proposed project was also completed. The list of related projects was prepared in consultation with the City of Moorpark staff. The list of related projects in the project site area is presented in Table 8-1. The location of the related projects is shown in Figure 8-1.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the ITE Trip Generation manual, or were obtained from previously approved traffic impact studies. The related projects' respective traffic generation for the AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in Table 8-1. The anticipated distribution of the related projects traffic volumes from the nearby traffic study was used for similar intersections and extrapolated for the remaining study intersections during the AM and PM peak hours as displayed in Figures 8-2 and 8-3, respectively.

[^0]Table 8-1
RELATED PROJECTS LIST AND TRIP GENERATION [1]

| $\begin{array}{\|l\|l\|} \hline \text { MAP } \\ \text { NO. } \\ \hline \end{array}$ | PROJECT NAME/ PROJECT NUMBER | PROJECTSTATUS | ADDRESS/L.OCATION | LAND USE DATA |  | $\begin{array}{\|c\|} \hline \text { PROJECT } \\ \text { DATA } \\ \text { SOURCE } \\ \hline \end{array}$ | DAILY <br> TRIP ENDS $\mid 2]$ <br> VOLUMES | AM PEAK HOUR VOLUMES [2] |  |  | PM PEAK HOURVOLUMES 121 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | LAND-USE | S SIZE |  |  | 1 N | OUT | TOTAL | IN | OUT | TOTAL |
| 1 | RPD 2003-04 | Under Construction | North of Championship Drive West of Grimes Canyon Road | Single-Family Home | 50 DU | [3] | 476 | 10 | 29 | 39 | 32 | 19 | 51 |
| 2 | RPD 2010-01 | Proposed | South of Los Angeles Avenue East of Maureen Lane | Single-Family Home | 284 DU | [3] | 2,704 | 53 | 160 | 213 | 179 | 105 | 284 |
| 3 | RPD 2012-01 | Proposed | North of Union Pacific Railroad Tracks West of Terminus of Casey Road | Single-Family Home | 755 DU | [3] | 7,225 | 142 | 424 | 566 | 481 | 282 | 763 |
| 4 | RPD 2009-02 | $\begin{array}{\|c\|} \hline \text { Under } \\ \text { Construction } \end{array}$ | Southeast Corner of Ridgecrest Drive and Elk Run Loop | Single-Family Home | 133 DU | [3] | 1.273 | 25 | 75 | 100 | 84 | 50 | 134 |
| 5 | $\begin{aligned} & \text { RPD 2004-02 } \\ & \text { RPD 2004-03 } \end{aligned}$ | $\begin{gathered} \text { Under } \\ \text { Construction } \end{gathered}$ | East of Spring Road North of Ridgecrest Drive | Single-Family Home | 132 DU | [3] | 1.257 | 25 | 74 | 99 | 83 | 49 | 132 |
| 6 | RPD 1999.02 | $\begin{gathered} \text { Under } \\ \text { Construction } \end{gathered}$ | Meridian Hills Drive West of Walnut Canyon Road | Single-Family Home | 248 DU | [3] | 2.361 | 47 | 140 | 187 | 156 | 92 | 248 |
| 7 | RPD 2003-01 | $\begin{gathered} \text { Under } \\ \text { Construction } \end{gathered}$ | West of Walnut Canyon Road South of Meridian Hills Drive | Single-Family Home | 17 DU | [3] | 163 | 3 | 10 | 13 | 11 | 6 | 17 |
| 8 | RPD 2014-1 | Approved | East of Walnut Canyon Road North of Wicks Road | Single-Family Home | 110 DU | [3] | 1.047 | 21 | 62 | 83 | 69 | 41 | 110 |
| 9 | RPD 2004-04 | Approved | Marine View Drive East of Walnut Canyon Road at Championship Drive | Single-Family Home | 21 DU | [3] | 200 | 4 | 12 | 16 | 13 | 8 | 21 |
| 10 | Affordable Housing Project | Proposed | Between Charles Street and Everett Streen Between Moonpark Avenue and Walnut Street | Apartment | 24 DU | [4] | 160 | 2 | 10 | 12 | 10 | 5 | 15 |
| 11 | RPD 2012-02 | Proposed | South of Casey Road West of Walnut Canyon Road | Apartment | 200 DU | [4] | 1,330 | 20 | 82 | 102 | 81 | 43 | 124 |
| 12 | RPD 2010-02 | $\left\|\begin{array}{c} \text { Under } \\ \text { Construction } \end{array}\right\|$ | South of Los Angeles Avenue Between Spring Road and Fremont Street | Condominium | 99 DU | [5] | 575 | 7 | 37 | 44 | 34 | 17 | 51 |
| 13 | RPD 2014-02 | Proposed | 635 Los Angeles Avenue | Condominium | 66 DU | [5] | 384 | 5 | 24 | 29 | 23 | 11 | 34 |
| 14 | CPD 2012-01 | Approved | 635 Los Angeles Avenue | Medical Office Building | 76,000 GSF | [6] | 2,746 | 138 | 37 | 175 | 71 | 192 | 263 |
| 15 | $\begin{gathered} \text { IPD 2000-01 } \\ \text { Modification No. I } \end{gathered}$ | Under Construction | West of SR-23 Freeway <br> East of Miller Parkway South of Moorpark Marketplace | Office Industrial Park | 350,000 GSF | [7] | 2,436 | 241 | 53 | 294 | 63 | 238 | 301 |
| 16 | TR 5609 | Grading Underway | North of Union Pacific Railroad Tracks West of Gabbert Road |  | 36 Acres | [8] | 2,272 | 256 | 52 | 308 | 67 | 251 | 318 |
| 17 | CUP 2003-05 | Proposed | 13950 Princeton Avenue | Concrete Batch Plant | 10 Acres | [9] | 68 | 10 | 10 | 20 | 11 | 11 | 22 |
| 18 | $\begin{aligned} & \text { GPA Pre-Screen } \\ & 2008-01 \end{aligned}$ | Approved | Los Angeles Avenue West of SCE Substation | General Office Production Sound Stages Security Personnel Trips | $\begin{array}{r} 112,850 \\ 9 \end{array} \text { GSF }$ | $\begin{aligned} & {[10]} \\ & {[10]} \\ & {[10]} \end{aligned}$ | $\begin{gathered} 1.242 \\ 1.836 \\ 30 \end{gathered}$ | 153 nom. nom. | $\begin{gathered} 21 \\ \text { nom. } \\ \text { nom. } \end{gathered}$ | 174 nom. nom. | $\begin{aligned} & 28 \\ & \text { nom. } \\ & \text { nom. } \end{aligned}$ | $\begin{aligned} & 140 \\ & \text { nom. } \\ & \text { nom. } \end{aligned}$ | 168 nom. nom. |
| 19 | City Hall/Civic Center Complex | Sitc <br> Planning | 83 High Street | City Hall | 32,000 GSF | [11] | 893 | 63 | 8 | 71 | 28 | 63 | 91 |
| 20 | CPD 2012-02 | Approved | 13950 Peach Hill Road | Church | 21,644 GSF | [12] | 197 | 10 | 9 | 19 | 11 | 9 | 20 |
| 21 | RPD 2013-01 | Proposed | North of Cascy Road West of Walnut Canyon Road | Senior Adult Housing | 390 DU | [13] | 1,342 | 27 | 51 | 78 | 53 | 45 | 98 |
| TOTAL |  |  |  |  |  |  | 32,217 | 1,262 | 1,351 | 2.613 | 1.588 | 1.677 | 3.265 |

[I] Source: City of Moorpark Residential. Commercial, Industrial, and Public Projects Quarterly Status Repon for July 2015
[2] Trips are one-way raffic movements, entering or leaving.
13) TTE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates - Daily Trip Rate 9.52 trips dwellimg unit. $50 \%$ inbound $50 \%$ outbound - AM Peak Hour Trip Rate. 0.75 trips ${ }^{\text {dw }}$ welling unit $25 \%$ inhound $75 \%$ outbound
-PM Peak Hour Trip Rate: 1.00 trip/dwelling unit; $63 \%$ inbound $/ 37 \%$ outbound
(4) ITE Land Use Code 220 (Apartment) trip generation average rates.

Daily Trip Rate: 6.65 trips/dwelling unii; $50 \%$ inbound $50 \%$ outbound - AM Peak Hour Trip Rate: 0.51 trips/dwelling unit: $20 \%$ inbound $80 \%$ outbound
-PM Peak Hour Trip Rate: 0.62 trip/dwelling unit: $65 \%$ inhound $35 \%$ outhound
(5) ITE Land Use Code 230 (Residential Condominium Townhouse) trip generation average rates Daily Trip Rate 5.81 mps/dwelling unit; $50 \%$ inhound $50 \%$ outbound -AM Peak Hour Trip Rate: 0.44 trips $/$ dwelling unit: $17 \%$ inbound $83 \%$ outboun -PM Peak Ilour Trip Rate: 0.52 trip/dwelling unit: $67 \%$ inbound $33 \%$ oubbound
16] ITE Land Use Code 720 (Medical-Dental Office Building) trip generation average rates -Daily Trip Rate 36.13 trips 1000 square fect; $50 \%$ inbound $/ 50 \%$ outbound AM Peak Hour Trip Rare 23 trips 1000 square feet $79 \%$ inbound $21 \%$ outbound PM Peak Hour Trip Rate $3.46 \mathrm{trp} / 1000$ square feel; $61 \%$ inbound $/ 39 \%$ outbound
[71 ITE. Land Use Code 130 (Industrial Park) trip generation average rates
18) ITE Land Use Code 130 (Industrial Park) urip generation average rates

- Daily Trip Rate 63.11 tripssacre, $50 \%$ inbound $50 \%$ oubbound
- AM Peak Hour Trip Rate: 8.55 trips $\sqrt{2}$. 8 ; $83 \%$ inbound $/ 7 \%$ outhoun

PM Peak Hour Tnp Rate 8.8s
ITE Land Use Code R20 Meavy indositia) trip generntion average rate
AM Prak How Trip Pate 198 trinvacrec 50 n PM Peak Hour Trip Rate: 216 trip/acte: $21^{\circ}$ oinhound $79^{\circ}$, oubbeund
Moapark West Studias Traffic Impact Analisss. RBF Consulting. Fetruary 2010
III) ITE Land Use Code 733 (Govermment Office Complex) trip generation average rates - Daily Trip Rate. 27.92 trips 1000 square feet: $50 \%$ onbound $50 \%$ outhound AM Peak Hour Trip Rate 2.21 trips 1000 square feet; $89 \%$ inbound $/ 1 \%$ o outbound

- Ampren AM Peak Hour Trip Rate 2.21 inps 1000 square fett; $89 \%$ imbound $/ 1 \%$ ouibound

112) ITE Land Use Code 560 (Church) trip generation average rates

- Daily Trip Rate 9.11 trips 1000 square feet, $50 \%$ inbound $50 \%$ o mutbound
- Daly Trip Rate 9.1 irpps 1000 square feet, $50 \%$ inbound $50 \%$ outbound
- AM Peak Hour Trip Rate 0.87 trips 1060 square feet; $55 \%$ mbound $45 \%$ outhound
- AM Peak Hour Trip Rate 0.87 trips 1000 square feet: $55 \%$ inhound $45 \%$ outhound
- PM Peak Hour Trip Rate: 0.94 trips 1000 square fet: $54 \%$ inhound $46 \%$ outhound
- Daily Trip Rate $6 . \%$ trips 1000 square feet; $50 \%$ inhound $/ 50 \%$ outbound
[13] ITE Land use Code 252 (Senior Aduit Housing) trip generation average rates.
- Daily Trip Rate 3.44 mips/duelling unit: $50 \%$ inbound $50 \%$, outbound AM Peak Hour Trip Rate: 84 trips 1000 square feel: $82 \%$ inbound $18 \%$ outbound

AM Peak Hour Trip Rate: 0.20 trips dwelling unit. $34 \%$ inhound $66 \%$ oubbound
-PM Peak Hour Trip Rate: 86 trip/ 1000 square feet: $21 \%$ inbound $79 \%$ oubound
PM Peak Hour Trip Rate: 0.25 trip/dwelling unit, $54^{\circ}$ " inbound $46^{\circ}$ a outhound


LOCATION OF RELATED PROJECTS



PROJECT SITE
not to scale
RELATED PROJECTS TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR
LINSCOTT, LAW \& GREENSPAN, engineers

### 9.0 Traffic Impact Analysis Methodology

The eight study intersections were evaluated using the Intersection Capacity Utilization (ICU) method of analysis which determines Volume-to-Capacity ( $v / c$ ) ratio on a critical lane basis. The overall intersection $v / c$ ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. The Levels of Service vary from LOS A (free flow) to LOS F (jammed condition). As a design constraint for the City of Moorpark, it is intended that a LOS of C or better be maintained. A description of the ICU method and corresponding Levels of Service is provided in Appendix B.

### 9.1 Impact Criteria and Thresholds

The relative impact of the added project traffic volumes expected to be generated by the proposed project during the AM and PM peak hours was evaluated based on analysis of future operating conditions at the eight study intersections, without and with the proposed project. The previously discussed capacity analysis procedures were utilized to evaluate the future $v / c$ relationships and service level characteristics at each study intersection.

The significance of the potential project generated traffic impacts at each study intersection was identified using guidelines included in the City of Moorpark's Guidelines for Preparing Traffic and Circulation Studies, 1993. According to the City's guidelines, a LOS degradation of one level or greater attributable to the project will be considered significant enough to require mitigation measures. A LOS degradation of less than one level may be considered significant, depending on circumstances. As a design constraint, it is intended that a LOS of C or better be maintained.

Based on City of Moorpark criteria, lane capacities of 1,500 vehicles per hour (vph) for left-turn and right-turn lanes, $1,600 \mathrm{vph}$ for through lanes, and $2,600 \mathrm{vph}$ for dual left or right turn lanes were used in the ICU calculations. Additionally, a clearance interval of 0.10 is also included in the ICU calculations.

### 9.2 Traffic Impact Analysis Scenarios

Traffic impacts at the study intersections were analyzed for the following conditions:
(a) Existing conditions.
(b) Condition (a) with completion and occupancy of the proposed project.
(c) Condition (b) with implementation of project mitigation measures, where necessary.
(d) Cumulative conditions with completion and occupancy of the related projects and the proposed project.
(e) Condition (d) with implementation of cumulative mitigation measures, where necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in capacity utilization at the eight study intersections.

Summaries of the $v / c$ ratios and LOS values for the study intersections during the AM and PM peak hours are shown in Table 9-1. The ICU data worksheets for the analyzed intersections are contained in Appendix B.

Table 9-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS


### 10.0 TRAFFIC ANALYSIS

### 10.1 Existing Conditions

As indicated in column [1] of Table 9-1, all eight study intersections are presently operating at LOS C or better during the AM and PM peak hours under existing conditions. As previously mentioned, the existing traffic volumes at the study intersections during the AM and PM peak hours are displayed in Figures 5-1 and 5-2, respectively.

### 10.2 Existing With Project Conditions

In order to determine the operating conditions of the street system under existing with project conditions, traffic generated by the proposed project was added to the existing traffic conditions. As shown in column [2] of Table 9-1, the study intersections are expected to continue to operate at LOS C or better during the AM and PM peak hours with the addition of project traffic. The existing with project traffic volumes at the study intersections during the AM and PM peak hours are shown in Figures 10-1 and 10-2, respectively.

### 10.3 Project Mitigation

As shown in Table 9-1, application of the City's threshold criteria to the "Existing With Project" scenario indicates that no significant project impacts are anticipated during either the AM or PM peak hours. Incremental, but not significant changes in the calculated V/C ratios are noted at the study intersections. Therefore, no traffic mitigation measures are required or recommended.



### 10.4 Future Cumulative Conditions

The traffic volumes associated with the cumulative conditions reflect the additional traffic due to the construction and occupancy of all foreseeable development projects in the project vicinity, including the proposed project. As previously mentioned, the list of other development projects is summarized in Table 8-1 (locations shown on Figure 8-1).

The $v / c$ ratios at all seven study intersections are incrementally increased with the addition of traffic generated by the related projects, as well as the proposed project. As presented in column [3] of Table 9-1, three of the seven study intersections are expected to continue operating at LOS C or better during the AM and PM peak hours with the addition of traffic due to the related projects and the proposed project. The following four study intersections are expected to operate at LOS D or worse during the peak hours under the year cumulative conditions as shown below:

Int. No. 1: Walnut Canyon Road-Moorpark Avenue/ AM Peak Hour: $v / c=0.987$, LOS E

Casey Road
Int. No. 4: Moorpark Avenue/High Street

Int. No. 5: Moorpark Avenue/Poindexter Avenue

Int. No. 8: Spring Road/High Street-Princeton Avenue

AM Peak Hour: $v / c=0.878$, LOS D PM Peak Hour: $v / c=1.010$, LOS F

AM Peak Hour: $v / c=1.063$, LOS F
PM Peak Hour: $v / c=0.901$, LOS E
AM Peak Hour: $v / c=0.813$, LOS D

The future year cumulative traffic volumes at the study intersections during the AM and PM peak hours are illustrated in Figures 10-3 and 10-4, respectively.

### 10.5 Cumulative Mitigation Measures

As indicated in the previous section, four of the seven study intersections are anticipated to operate at LOS D or worse during the AM and/or PM peak hours in the cumulative conditions. A review of potential mitigation measures, which will improve the overall operating conditions at these locations, have been conducted. In general, off-site improvement measures identified for future cumulative conditions should not be the sole responsibility of an individual project, but rather the development may contribute towards the cost of implementation of such improvements based on the project's share or usage of the facilities being improved. It is recognized that as a design constraint for the City of Moorpark, it is intended that a LOS C or better be maintained to the extent possible. The cumulative mitigation measures recommended at the study intersections are described in the following paragraphs.



## Intersection No. 1: Walnut Canyon Road-Moorpark Avenue/Casey Road

The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure at the Walnut Canyon Road-Moorpark Avenue/Casey Road intersection includes the traffic signal modification to provide an eastbound right-turn overlap phase to coincide with the northbound left-turn phase.

As shown in column [4] of Table 9-1, implementation of the recommended cumulative mitigation measures is expected to improve the $v / c$ ratio at this intersection to 0.693 (LOS B) from 0.987 (LOS E) during the AM peak hour.

Intersection No. 4: Moorpark Avenue/High Street
The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure involves the widening of Moorpark Avenue to provide additional lanes between Casey Road and Third Street. The improvement measure at the Moorpark Avenue/High Street intersection includes the installation of additional northbound and southbound lanes as well as a traffic signal modification to provide a westbound right-turn overlap phase to coincide with the southbound left-turn phase. The resulting lane configurations on Moorpark Avenue at the intersection on the northbound approach would consist of one shared left/through lane, one through lane and one right-turn only lane and on the southbound approach would consist of one left-turn only one through lane and one shared through/right only lane.

As shown in column [4] of Table 9-1, implementation of the recommended cumulative mitigation measures are expected to improve the $v / c$ ratio at this intersection maintained the $\mathrm{v} / \mathrm{c}$ ratio to 0.608 (LOS B) from 0.878 (LOS D) during the AM peak hour and to 0.706 (LOS C) from 1.010 (LOS F) during the PM peak hour.

## Intersection No. 5: Moorpark Avenue/Poindexter Avenue

The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure involves the widening of Moorpark Avenue to provide additional lanes between Casey Road and Third Street. The improvement measure at the Moorpark/Poindexter Avenue intersection includes the installation of additional southbound and northbound lanes. The resulting lane configuration on Moorpark Avenue for both the southbound and northbound approaches to the intersection would consist of one left-turn lane, one through lane and one shared through/right-turn lane. In addition, the cumulative measure at this location would consist of the conversion of the eastbound right-turn only lane to a shared left/through/right-turn lane. The resulting lane configuration on Moorpark Avenue on the eastbound approach to the intersection would consist of one left-turn lane and one shared left/through/right-turn lane

As shown in column [4] of Table 9-1, implementation of the recommended cumulative mitigation measures is expected to improve the $\mathrm{v} / \mathrm{c}$ ratio at this intersection to 0.623 (LOS B) from 1.063 (LOS F) during the AM peak hour and to 0.544 (LOS A) from 0.901 (LOS E) during the PM peak hour.

## Intersection No. 8: Spring Road/High Street-Princeton Avenue

The cumulative improvement measure at this location consists of restriping the eastbound approach. The improvement involves the restriping the eastbound right-turn only lane into a shared through and right-turn lane. The resulting lane configuration on High Street on the eastbound approach of the intersection would consist of one left-turn only lane, one through lane, one through lane and one shared through and right-turn lane.

As shown in column [4] of Table 9-1, implementation of the recommended cumulative mitigation measures is expected to improve the $\mathrm{v} / \mathrm{c}$ ratio at this intersection to 0.763 (LOS C) from 0.813 (LOS D) during the AM peak hour.

### 11.0 Fair Share Analysis

The methodology and the calculations of the project's pro-rata percentage at the study intersections which require cumulative regional improvements are summarized in Table 11-1. The method used for these calculations was based on the sum of the total weekday morning and afternoon (AM and PM) peak hours project generated traffic volumes on the approaches to each affected study intersection divided by the project plus other development (related) projects traffic volumes on those same approaches for the same AM and PM peak hours. It should be noted that existing traffic volumes are not included in the calculations.

As shown in Table 11-1, the proposed project's fair share contribution toward the cumulative regional improvements ranges from $0.4 \%$ at the Walnut Canyon Road-Moorpark Avenue/Casey Road intersection to $2.6 \%$ at the Spring Road/High Street-Princeton Avenue and Moorpark Avenue/High Street intersections.

Table 11-1

## PRO-RATA PERCENTAGE OF CUMULATIVE IMPROVEMENT MEASURES

09-Feb-16


### 12.0 Conclusions

This traffic analysis has been conducted to identify and evaluate the potential impacts of traffic generated by the proposed Everett Street Terraces project. In order to evaluate the potential traffic impacts to the local street system, eight intersections were analyzed to determine changes in operations following occupancy and utilization of the proposed project. It is concluded that the proposed project is not anticipated to create a significant impact at any of the study intersections, thus, no mitigation measures are required or recommended.

The project, along with the identified cumulative development projects, is anticipated to contribute to the degradation of intersection operations in the future cumulative traffic conditions. Potential cumulative improvement measures have been identified that are anticipated to improve the operating conditions. It is anticipated that the proposed project would contribute funds on a fair-share basis towards the implementation of the cumulative measures.

Appendix A
Manual Traffic Count Data

## Intersection Turning Movement <br> Prepared by:

National Data \& Surveying Services


CONTROL : Signalized

# Intersection Turning Movement Prepared by: 

National Data \& Surveying Services


CONTROL : Signalized

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 



# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_002
Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013

| NS/EW Streets: | PM Moorpark ${ }^{\text {PM }}$ ( ${ }^{\text {a/12/2013 }}$ |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Moorpark Ave |  |  | Moorpark Ave |  |  | Everett St |  |  | Everett St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | $\begin{gathered} \mathrm{NL} \\ 0 \end{gathered}$ | $\begin{gathered} \text { NT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { NR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { SL } \\ 0 \end{gathered}$ | $\begin{gathered} \text { ST } \\ 1 \end{gathered}$ | $\begin{gathered} \text { SR } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{EL} \\ 0 \end{gathered}$ | $\begin{gathered} \text { ET } \\ 0 \end{gathered}$ | $\begin{gathered} \text { ER } \\ 0 \end{gathered}$ | WL $1$ | $\begin{gathered} \text { WT } \\ 0 \end{gathered}$ | WR | TOTAL |
| 4:00 PM |  | 51 | 2 | 0 | 46 |  |  |  |  | 3 |  | 0 | 102 |
| 4:15 PM |  | 50 | 3 | 0 | 35 |  |  |  |  | 3 |  | 2 | 93 |
| 4:30 PM |  | 56 | 2 | 1 | 56 |  |  |  |  | 2 |  | 1 | 118 |
| 4:45 PM |  | 73 | 1 | 1 | 54 |  |  |  |  | 0 |  | 2 | 131 |
| 5:00 PM |  | 60 | 2 | 1 | 56 |  |  |  |  | 2 |  | 3 | 124 |
| 5:15 PM |  | 62 | 5 | 0 | 49 |  |  |  |  | 3 |  | 2 | 121 |
| 5:30 PM |  | 53 | 2 | 0 | 43 |  |  |  |  | 3 |  | 2 | 103 |
| 5:45 PM |  | 47 | 5 | 1 | 44 |  |  |  |  | 3 |  | 0 | 100 |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| TOTAL VOLUMES : | 0 | 452 | 22 | 4 | 383 | 0 | 0 | 0 | 0 | 19 | 0 | 12 | 892 |
| APPROACH \%'s : | 0.00\% | 95.36\% | 4.64\% | 1.03\% | 98.97\% | 0.00\% | \#DIV/0! | \#DIV/0! | \#DIV/0! | 61.29\% | 0.00\% | 38.71\% |  |


| PEAK HR START TIME : | 430 PM |  | 10 | 3 |  | 0 | 0 | 0 | 0 | 7 | 0 | 8 | TOTAL$494$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HR VOL : | 0 | 251 |  |  | 215 |  |  |  |  |  |  |  |  |
| PEAK HR FACTOR : |  | 0.882 |  |  | 0.956 |  |  | 0.000 |  |  | 0.750 |  | 0.943 |

CONTROL : 1-Way Stop (WB)

## Intersection Turning Movement

Prepared by:
National Data \& Surveying Services


CONTROL : 2-Way Stop (EB,WB)

# Intersection Turning Movement Prepared by: <br> National Data \& Surveying Services 



CONTROL : 2-Way Stop (EB,WB)

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 



CONTROL : Signalized

## Intersection Turning Movement <br> Prepared by:

National Data \& Surveying Services
Project ID: CA13_5332_004
Day: WEDNESDAY

| PEAK HR START TIME: | 430 PM |  | 341 | 49 | 175 | 15 | 13 | 59 | 63 | 235 | 45 | 79 | $\begin{aligned} & \hline \text { TOTAL } \\ & 1339 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HR VOL : | 66 | 199 |  |  |  |  |  |  |  |  |  |  |  |
| PEAK HR FACTOR : |  | 0.907 |  |  | 0.892 |  |  | 0.750 |  |  | 0.889 |  | 0.927 |

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

| Project ID: CA13_5332_005City: City of Moorpark |  |  |  |  |  |  |  |  |  |  | Day: WEDNESDAY |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NS/EW Streets: | AM |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Moorpark Ave |  |  | Moorpark Ave |  |  | Poindexter Ave-1st St |  |  | Poindexter Ave-1st St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  | TOTAL |
|  | $\begin{gathered} \mathrm{NL} \\ 1 \end{gathered}$ | $\begin{gathered} \text { NT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { NR } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{SL} \\ 1 \end{gathered}$ | $\begin{gathered} \mathrm{ST} \\ 1 \end{gathered}$ | $\begin{gathered} S R \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{EL} \\ 1 \end{gathered}$ | $\begin{gathered} \mathrm{ET} \\ 0 \end{gathered}$ | $\begin{gathered} \text { ER } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WL } \\ 1 \end{gathered}$ | $\begin{aligned} & \text { WT } \\ & 0.5 \end{aligned}$ | $\begin{aligned} & \text { WR } \\ & 0.5 \end{aligned}$ |  |
| 7:00 AM | 6 | 29 | 0 | 1 | 37 | 58 | 28 | 0 | 8 |  | 9 | 0 |  |
| 7:15 AM | 7 | 34 | 2 | 0 | 38 | 58 | 26 | 3 | 6 | 1 0 | 12 | 0 | 177 |
| 7:30 AM | 20 | 57 | 1 | 2 | 45 | 118 | 64 | 8 | 9 | 0 | 14 | 1 | 339 |
| 7:45 AM | 23 | 89 | 2 | 2 | 47 | 84 | 64 | 2 | 10 | 0 | 8 | 4 | 335 |
| 8:00 AM |  | 77 | 1 | 1 | 72 | 57 | 66 | 3 | 20 | 0 | 5 | 2 | 318 |
| 8:15 AM | $\begin{aligned} & 14 \\ & 33 \end{aligned}$ | 58 | 1 | 1 | 59 | 48 | 36 | 7 | 17 | 1 | 9 | 2 | 272 |
| 8:30 AM | $16$ | 53 | 0 | 2 | 62 | 78 | 39 | 7 | 43 | 0 | 9 | 0 | 309 |
| 8:45 AM | $\begin{aligned} & 10 \\ & 11 \end{aligned}$ | 38 | 2 | 1 | 43 | 31 | 30 | 2 | 19 | 0 | 1 | 2 | 180 |
| TOTAL VOLUMES : APPROACH \%'s : | $\begin{gathered} \hline \mathrm{NL} \\ 130 \\ 22.65 \% \end{gathered}$ | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|  |  | 435 | 9 | 10 | 403 | 532 | 353 | 32 | 132 | 2 | 67 | 11 | 2116 |
|  |  | 75.78\% | 1.57\% | 1.06\% | 42.65\% | 56.30\% | 68.28\% | 6.19\% | 25.53\% | 2.50\% | 83.75\% | 13.75\% |  |
| PEAK HR START TIME : | 730 AM |  |  | 6 |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : | 90 | 281 | 5 |  | 223 | 307 | 230 | 20 | 56 | 1 | 36 | 9 | 1264 |
| PEAK HR FACTOR : |  | 0.825 |  |  | 0.812 |  |  | 0.860 |  |  | 0.767 |  | 0.932 |

CONTROL : Signalized

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_008
City: City of Moorpark
Day: WEDNESDAY
Date: 6/12/2013

| NS/EW Streets: | AM |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Spring Rd |  |  | Spring Rd |  |  | High St-Princeton Ave |  |  | High St-Princeton Ave |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|  | 1 | 1.5 | 0.5 | 1 | 1.5 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| 7:00 AM | 11 | 37 | 28 | 30 | 96 | 3 | 2 | 20 | 13 | 16 | 39 | 26 | 321 |
| 7:15 AM | 9 | 50 | 35 | 57 | 110 | 8 | 0 | 23 | 5 | 15 | 48 | 25 | 385 |
| 7:30 AM | 11 | 34 | 41 | 66 | 129 | 10 | 1 | 48 | 6 | 15 | 70 | 21 | 452 |
| 7:45 AM | 30 | 47 | 42 | 79 | 123 | 9 | 2 | 48 | 19 | 21 | 73 | 26 | 519 |
| 8:00 AM | 37 | 64 | 59 | 57 | 136 | 5 | 6 | 49 | 32 | 15 | 41 | 20 | 521 |
| 8:15 AM | 33 | 42 | 50 | 66 | 109 | 3 | 3 | 52 | 26 | 30 | 66 | 23 | 503 |
| 8:30 AM | 25 | 48 | 62 | 69 | 107 | 8 | 2 | 44 | 27 | 31 | 38 | 28 | 489 |
| 8:45 AM | 14 | 38 | 51 | 49 | 92 | 7 | 5 | 44 | 17 | 22 | 48 | 25 | 412 |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| TOTAL VOLUMES : | 170 | 360 | 368 | 473 | 902 | 53 | 21 | 328 | 145 | 165 | 423 | 194 | 3602 |
| APPROACH \%'s : | 18.93\% | 40.09\% | 40.98\% | 33.12\% | 63.17\% | 3.71\% | 4.25\% | 66.40\% | 29.35\% | 21.10\% | 54.09\% | 24.81\% |  |


| PEAK HR START TIME : | 745 AM |  | 213 | 271 |  | 25 | 13 | 193 | 104 | 97 | 218 | 97 | $\begin{aligned} & \text { TOTAL } \\ & 2032 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HR VOL : | 125 | 201 |  |  | 475 |  |  |  |  |  |  |  |  |
| PEAK HR FACTOR : |  | 0.842 |  |  | 0.914 |  |  | 0.891 |  |  | 0.858 |  | 0.975 |

CONTROL : Signalized

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_005
Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013


CONTROL : Signalized

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 



CONTROL : 2-Way Stop (NB,SB)

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 



CONTROL : 2-Way Stop (NB,SB)

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_007
Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013

| NS/EW Streets: | AM |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Spring Rd |  |  | Spring Rd |  |  | Charles St |  |  | Charles St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|  | 1 | 1.5 | 0.5 | 1 | 2 | 0 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 1 |  |
| 7:00 AM | 7 | 58 | 2 | 0 | 113 | 1 | 0 | 1 | 13 | 10 | 3 | 1 | 209 |
| 7:15 AM | 3 | 67 | 3 | 3 | 156 | 2 | 2 | 2 | 14 | 15 | 1 | 2 | 270 |
| 7:30 AM | 3 | 53 | 4 | 1 | 190 | 0 | 0 | 0 | 10 | 14 | 2 | 2 | 279 |
| 7:45 AM | 5 | 65 | 0 | 1 | 180 | 1 | 2 | 1 | 11 | 11 | 8 | 1 | 286 |
| 8:00 AM | 7 | 79 | 5 | 2 | 162 | 0 | 0 | 3 | 16 | 10 | 2 | 0 | 286 |
| 8:15 AM | 4 | 60 | 3 | 1 | 156 | 0 | 0 | 1 | 21 | 18 | 3 | 1 | 268 |
| 8:30 AM | 2 | 75 | 4 | 1 | 151 | 1 | 3 | 1 | 24 | 8 | 1 | 1 | 272 |
| 8:45 AM | 8 | 55 | 2 | 1 | 115 | 1 | 0 | 0 | 7 | 7 | 2 | 0 | 198 |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| TOTAL VOLUMES : | 39 | 512 | 23 | 10 | 1223 | 6 | 7 | 9 | 116 | 93 | 22 | 8 | 2068 |
| APPROACH \%'s : | 6.79\% | 89.20\% | 4.01\% | 0.81\% | 98.71\% | 0.48\% | 5.30\% | 6.82\% | 87.88\% | 75.61\% | 17.89\% | 6.50\% |  |


| PEAK HR START TIME : | 715 AM |  | 12 | 7 | 688 | 3 | 4 | 6 | 51 | 50 | 13 | 5 | $\begin{aligned} & \hline \text { TOTAL } \\ & 1121 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HR VOL : | 18 | 264 |  |  |  |  |  |  |  |  |  |  |  |
| PEAK HR FACTOR : |  | 0.808 |  |  | 0.914 |  |  | 0.803 |  |  | 0.850 |  | 0.980 |

CONTROL : Signalized

# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_007
Day: WEDNESDAY


[^1]
# Intersection Turning Movement <br> Prepared by: <br> National Data \& Surveying Services 

| Project ID: CA13_5332_008 City: City of Moorpark |  |  |  |  |  |  |  |  |  | Day: WEDNESDAY <br> Date: 6/12/2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | PM |  |  |  |  |  |  |  |  |  |
| NS/EW Streets: | Spring Rd |  |  | Spring Rd |  |  | High St-Princeton Ave |  |  | High St-Princeton Ave |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | $\begin{gathered} \mathrm{NL} \\ 1 \end{gathered}$ | $\begin{aligned} & \text { NT } \\ & 1.5 \end{aligned}$ | $\begin{aligned} & \text { NR } \\ & 0.5 \end{aligned}$ | $\begin{gathered} \mathrm{SL} \\ 1 \end{gathered}$ | $\begin{aligned} & \text { ST } \\ & 1.5 \end{aligned}$ | $\begin{aligned} & \text { SR } \\ & 0.5 \end{aligned}$ | $\begin{gathered} \mathrm{EL} \\ 1 \end{gathered}$ | ET | $\begin{gathered} \text { ER } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WL } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WR } \\ 1 \end{gathered}$ | TOTAL |
| 4:00 PM | 22 | 78 | 47 | 43 | 51 | 5 | 8 | 77 | 25 | 36 | 57 | 59 | 508 |
| 4:15 PM | 42 | 102 | 47 | 24 | 39 | 4 | 5 | 66 | 16 | 25 | 51 | 67 | 488 |
| 4:30 PM | 32 | 100 | 50 | 46 | 90 | 12 | 11 | 52 | 22 | 30 | 43 | 67 | 555 |
| 4:45 PM | 29 | 115 | 44 | 32 | 60 | 6 | 18 | 70 | 54 | 26 | 73 | 69 | 596 |
| 5:00 PM | 23 | 103 | 49 | 52 | 69 | 13 | 10 | 95 | 21 | 36 | 47 | 66 | 584 |
| 5:15 PM | 36 | 110 | 53 | 40 | 59 | 8 | 9 | 48 | 25 | 49 | 63 | 77 | 577 |
| 5:30 PM | 30 | 101 | 47 | 38 | 72 | 8 | 10 | 48 | 23 | 30 | 41 | 70 | 518 |
| 5:45 PM | 31 | 118 | 48 | 35 | 56 | 6 | 21 | 61 | 51 | 26 | 75 | 68 | 596 |
|  | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | W | TO |
| TOTAL VOLUMES : | 245 | 827 | 385 | 310 | 496 | 62 | 92 | 517 | 237 | 258 | 450 | 543 | 4422 |
| APPROACH \%'s : | 16.82\% | 56.76\% | 26.42\% | 35.71\% | 57.14\% | 7.14\% | 10.87\% | 61.11\% | 28.01\% | 20.62\% | 35.97\% | 43.41\% |  |
| PEAK HR START TIME : | 430 |  |  |  |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : | 120 | 428 | 196 | 170 | 278 | 39 | 48 | 265 | 122 | 141 | 226 | 279 | 2312 |
| PEAK HR FACTOR : |  | 0.935 |  |  | 0.823 |  |  | 0.766 |  |  | 0.854 |  | 0.970 |

CONTROL : Signalized

Appendix B
Supplemental Future Cumulative Traffic Count Data


Appendix C
ICU and Levels of Service Explanation ICU Data Worksheets - Weekday AM and PM Peak Hours

## INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 Highway Capacity Manual, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing, The capacity per hour of green time for each approach is calculated based on the methods of the Highway Capacity Manual. The proportion of total signal time needed by each key movement is determined and compared to the total time available ( 100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the Highway Capacity Manual) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics

| Level of Service | Load Factor | Equivalent ICU |
| :---: | :---: | :---: |
| A | 0.0 | $0.00-0.60$ |
| B | $0.0-0.1$ | $0.61-0.70$ |
| C | $0.1-0.3$ | $0.71-0.80$ |
| D | $0.3-0.7$ | $0.81-0.90$ |
| E | $0.7-1.0$ | $0.91-1.00$ |
| F | Not Applicable | Not Applicable |

## SERVICE LEVEL A

There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

## SERVICE LEVEL B

This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

## SERVICE LEVEL C

At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

## SERVICE LEVEL D

This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

## SERVICE LEVEL E

This represents near capacity and capacity operation. At capacity ( $\mathrm{ICU}=1.0$ ) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

## SERVICE LEVEL F

Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

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| N-S St: | Walnut Canyon Road/Moorpark Avenue |
| :--- | :--- |
| E-W St: | Casey Road |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU1 |

,

## INTERSECTION CAPACITY UTILIZATION

alnut Canyon Road/Moorpark Avenue @ Casey Road
AM
2.00\%

02/08/2016


[^2]2 Capacity expressed in veh/hour of green

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| N-S St: | Walnut Canyon Road/Moorpark Avenue |
| :--- | :--- |
| E-W St: | Casey Road |
| Project: | Everett Street Terraces Project/5-13-0055-1 |
| File: | ICU1 |

## INTERSECTION CAPACITY UTILIZATION

alnut Canyon Road/Moorpark Avenue @ Casey Road
Peak hr. PM
2.00\%

02/08/2016


[^3]2 Capacity expressed in veh/hour of green

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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | Everett Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU2 |

## INTERSECTION CAPACITY UTILIZATION

Moorpark Avenue @ Everett Street
Peak hr: AM
Annual Growth: $2.00 \%$

02/08/2016


Key conflicting movement as a part of ICU
1 Counts conducted by NDS
2 Capacity expressed in veh/hour of green

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|  |  |
| :--- | :--- |
| N-S St: | Moorpark Avenue |
| E-W St: | Everett Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU2 |

## INTERSECTION CAPACITY UTILIZATION

Moorpark Avenue @ Everett Street
Peak hr: PM
2.00\%

02/08/2016


[^4]2 Capacity expressed in veh/hour of green

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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | Charles Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU3 |

## INTERSECTION CAPACITY UTILIZATION

Moorpark Avenue @ Charles Street
AM
2.00\%
2.00\%

Date:
02/08/2016


* Key conflicting movement as a part of ICU

1 Counts conducted by NDS
2 Capacity expressed in veh/hour of green

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(818) 835.8648 Fax (818) 835.8649

| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | Charles Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU3 |

## INTERSECTION CAPACITY UTILIZATION

Moorpark Avenue @ Charles Stree
PM
Date:
02/08/2016


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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | High Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU4 |

## INTERSECTION CAPACITY UTILIZATION

eak hr:
Annual Growth: $\quad 2.00^{\circ}$

Date:
02/08/2016


Key conflicting movement as a part of ICU
1 Counts conducted by NDS
2 Capacity expressed in veh/hour of green
3 Eastbound and Westbound operate with split phasing.

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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | High Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU4 |

## INTERSECTION CAPACITY UTILIZATION

Moorpark Avenue @ High Street
Peak hr: PM
Annual Growth: $2.00 \%$

Date:
02/08/2016


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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | Poindexter Avenue/1st Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU5 |

Project. Everett Street Terraces Project / 5-13-0055-1
,


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| N-S St: | Moorpark Avenue |
| :--- | :--- |
| E-W St: | Poindexter Avenue/1st Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU5 |

Project: Everett Street Terraces Project / 5-13-0055-1
,


[^8]IINSCOTT, LAW \& GREENSPAN, ENGINEERS
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| N-S St: | Walnut Street |
| :--- | :--- |
| E-W St: | High Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU6 |

## INTERSECTION CAPACITY UTILIZATION

| Walnut Street @ High Street |  |
| :--- | :---: |
| Peak hr: | AM |
| Annual Growth: | $2.00 \%$ |

2.00\%

Date:
02/08/2016


* Key conflicting movement as a part of ICU
1 Counts conducted by NDS

2 Capacity expressed in veh/hour of green

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| N-S St: | Walnut Street |
| :--- | :--- |
| E-W St: | High Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU6 |

## INTERSECTION CAPACITY UTILIZATION

Walnut Street @ High Street
Peak hr:
Annual Growth: $\quad 2.00^{\circ}$
2.00\%

Date:
02/08/2016


[^9]2 Capacity expressed in veh/hour of green

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| N-S St: | Spring Road |
| :--- | :--- |
| E-W St: | Charles Street |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU7 |

## INTERSECTION CAPACITY UTILIZATION

Spring Road @ Charles Street
Peak hr: AM
Annual Growth: $\quad 2.00 \%$

Date:
02/08/2016


[^10]2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION
Spring Road @ Charles Street
Peak hr:
Annual Growth: $\quad 2.00 \%$
Date:
02/08/2016
N-S St: $\quad$ Spring Road
E-W St: Charles Street
Project: Everett Street Terraces Project / 5-13-0055-1
File: ICU7


[^11]2 Capacity expressed in veh/hour of green

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| N-S St: | Spring Road |
| :--- | :--- |
| E-W St: | High Street/Princeton Avenue |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU8 |

INTERSECTION CAPACITY UTILIZATION
Spring Road @ High Street/Princeton Avenue
Peak hr: AM
2.00\%

Date:
02/08/2016



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| N-S St: | Spring Road |
| :--- | :--- |
| E-W St: | High Street/Princeton Avenue |
| Project: | Everett Street Terraces Project / 5-13-0055-1 |
| File: | ICU8 |

## INTERSECTION CAPACITY UTILIZATION

Spring Road @ High Street/Princeton Avenue
Peak hr: PM
2.00\%

Date:
02/08/2016


[^13]
# Traffic Impact Study Everett Street Terraces Project City of Moorpark, California May 21, 2021 

Prepared for:
Everett Street Terraces
1001 Newbury Road
Thousand Oaks, CA 91320

LLG Ref. 5-13-0055-1


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## APPENDICES

## APPENDIX

A. Iteris Technical Memorandum
B. Historical Traffic Count Data
C. ICU and Levels of Service Explanation

ICU Data Worksheets - AM and PM Peak Hours

## Traffic Impact Study

# Everett Street Terraces Project 

City of Moorpark, California
May 21, 2021

### 1.0 Introduction

This traffic analysis has been conducted to identify and evaluate the potential traffic impacts of the proposed Everett Street Terraces project (the "Project"). The proposed Project is located on the north side of Everett Street, east of Moorpark Avenue (the "Project Site") in the City of Moorpark, California. The proposed Project Site location and general vicinity are shown in Figure 1-1.

In compliance with the California Environmental Quality Act (CEQA), the City of Moorpark (the "City") is in the process of developing new traffic study guidelines to identify vehicle miles traveled (VMT) as the primary metric for evaluating a project's transportation impacts. Therefore, this traffic analysis provides an assessment of the Project's VMT transportation impact.

In addition, this traffic analysis follows the City of Moorpark's current traffic study guidelines (i.e., Guidelines for Preparing Traffic and Circulation Studies, 1993). This traffic analysis evaluates the potential project-related operational deficiencies associated with the proposed development at eight key intersections in the vicinity of the Project Site. The study intersections were determined in consultation with the City of Moorpark staff. The Intersection Capacity Utilization (ICU) method was used to determine volume-to-capacity ratios and corresponding Levels of Service (LOS) at the study intersections.

This study (i) presents a VMT assessment, (ii) presents existing traffic volumes, (iii) forecasts existing plus Project traffic volumes, (iv) forecasts future cumulative baseline traffic volumes, (v) forecasts future cumulative traffic volumes with the proposed Project, (vi) determines future operations at the study intersections with Project-related traffic, and (vii) provides fair-share calculations toward cumulative improvement measures, where appropriate.


### 2.0 Project Description

## $2.1 \quad$ Site Location

The proposed Project Site is located on the north side of Everett Street, east of Moorpark Avenue in the City of Moorpark. The Project Site is bounded by Wicks Road to the north, Everett Street to the south, residential uses to the east, and Moorpark Avenue to the west.

### 2.2 Existing Project Site

The Project Site is located at the northeast corner of the Everett Street / Moorpark Avenue intersection. The overall Project Site comprises approximately 2.4 acres and a portion of the site was previously occupied by six single-family homes. The six single-family homes have been removed to accommodate the proposed Project.

### 2.3 Proposed Project Description

The Project consists of the development of a residential condominium complex with 60 dwelling units. The condominium complex will consist of 2-bedroom and 3-bedroom units. The Project proposes to provide 153 vehicle parking spaces on-site. Construction and occupancy of the proposed Project is planned to be completed by the year 2024. The site plan for the proposed Project is illustrated in Figure 2-1.


### 3.0 SITE ACCESS AND CIRCULATION

The site access scheme for the proposed Project is displayed in Figure 2-1. Descriptions of the existing site access and proposed Project site access and circulation schemes are provided in the following subsections.

### 3.1 Existing Site Access

Vehicular access to the existing Project Site is presently provided via multiple access points on Everett Street and Moorpark Avenue along the Project frontage. Two driveways are currently provided on the east side of Moorpark Avenue, which borders the Project Site to the west. Three driveways are currently provided on the north side of Everett Street, which borders the Project Site to the south. All existing driveways currently accommodate left-turn and right-turn ingress and egress turning movements.

### 3.2 Proposed Project Site Access and Circulation

The proposed Project Site access scheme is displayed in Figure 2-1. Vehicular access to the Project Site will be provided via one driveway on the north side of Everett Street at the most easterly portion of the Project Site. The driveway will accommodate full vehicular access (i.e., left-turn and right-turn ingress and egress turning movements). As noted in Section 10.3, a previous City of Moorpark Public Works Department Capital Project involves the widening of Moorpark Avenue to provide additional lanes between Casey Road and Third Street. No other roadway improvements or roadway realignments are proposed.

### 4.0 Existing Street System

### 4.1 Regional Highway System

Regional access to the Project Site is provided by the State Route 118 (Ronald Reagan) Freeway and State Route 23 (Moorpark) Freeway. Full freeway ramp connections are provided on both the State Route 118 and State Route 23 Freeways at Los Angeles Avenue. Brief descriptions of the State Route 118 Freeway and State Route 23 Freeway are provided in the following paragraphs.

State Route 118 (Ronald Reagan) Freeway is a major freeway connecting Moorpark with the San Fernando Valley and the Los Angeles Basin. In the vicinity of the Project, the State Route 118 Freeway provides two travel lanes in each direction. Both northbound and southbound ramps are provided on State Route 118 at Los Angeles Avenue.

State Route 23 (Moorpark) Freeway extends from the junction with the State Route 118 Freeway southerly to the US-101 (Ventura) Freeway in the City of Thousand Oaks. State Route 23 Freeway provides two to three travel lanes in each direction in the vicinity of the Project. Both northbound and southbound ramps are provided on State Route 23 at Los Angeles Avenue.

### 4.2 Local Street System

Immediate access to the Project Site is provided via Everett Street. The following eight study intersections were selected by City of Moorpark staff for analysis of potential impacts related to the proposed Project:

1. Walnut Canyon Road - Moorpark Avenue / Casey Road
2. Moorpark Avenue / Everett Street
3. Moorpark Avenue / Charles Street
4. Moorpark Avenue / High Street
5. Moorpark Avenue / Poindexter Avenue - $1^{\text {st }}$ Street
6. Walnut Street / High Street
7. Spring Road / Charles Street
8. Spring Road / High Street - Princeton Avenue

Five of the eight study intersections selected for analysis are currently controlled by traffic signals. The remaining three study intersections - Moorpark Avenue / Everett Street, Moorpark Avenue / Charles Street and Walnut Street / High Street - are currently controlled by stop signs. The existing lane configurations at the eight study intersections are displayed in Figure 4-1.


### 4.3 Roadway Descriptions

Brief descriptions of the important roadways in the Project vicinity are provided in the following paragraphs.

Walnut Canyon Road is a north-south roadway located west of the Project Site. South of Casey Road, Walnut Canyon Road becomes Moorpark Avenue. One through travel lane is provided in each direction on Walnut Canyon Road in the Project vicinity. Curbside parking is prohibited along both sides of Walnut Canyon Road in the Project vicinity. Walnut Canyon Road is posted for a 40 miles per hour speed limit in the northbound direction and is posted for a 30 miles per hour speed limit in the southbound direction. However, in the Project vicinity, Walnut Canyon Road is posted for a 25 miles per hour speed limit to reflect a 25 miles per hour school zone. Walnut Canyon Road is a State highway (SR-23).

Moorpark Avenue is a north-south roadway that borders the Project Site to the west. North of Casey Road, Moorpark Avenue becomes Walnut Canyon Road. South of Los Angeles Avenue, Moorpark Avenue terminates just north of the Arroyo Simi River. One through travel lane is provided in each direction on Moorpark Avenue in the Project vicinity. A separate exclusive left-turn lane is provided in the northbound direction at the Casey Road intersection and in each direction at the Charles Street and Poindexter Avenue intersections. A separate exclusive leftturn lane is also provided in the southbound direction at the High Street intersection. A separate exclusive right-turn lane is provided in the northbound direction on Moorpark Avenue at the High Street intersection. Curbside parking is prohibited along both sides of Moorpark Avenue in the Project vicinity. Moorpark Avenue is posted for a 30 miles per hour speed limit. However, in the Project vicinity, Moorpark Avenue is posted for a 25 miles per hour speed limit to reflect a 25 miles per hour school zone. Moorpark Avenue is a State highway (SR-23).

Walnut Street is a north-south roadway that is located east of the Project Site. Walnut Street extends from Everett Street on the north to High Street on the south. One through travel lane is provided in each direction on Walnut Street in the Project vicinity. A shared left-turn/right-turn lane is provided in the southbound direction on Walnut Street at the High Street intersection. Parking is allowed along both sides of Walnut Street in the Project vicinity, except between Charles Street and High Street where two-hour angled parking is provided from 9:00 AM to 9:00 PM along both sides of the street. There is no posted speed limit on Walnut Street within the Project study area, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code Section 22352(b)(1).

Spring Road is a north-south roadway that is located east of the Project Site. Spring Road extends from Walnut Canyon Road on the north to Tierra Rejada Road on the south. Two through travel lanes are provided in each direction on Spring Road north of Los Angeles Avenue. South of Los Angeles Avenue, one through travel lane is provided in each direction on Spring Road. Separate exclusive left-turn lanes are provided on Spring Road in each direction at the Charles Street and High Street - Princeton Avenue intersections. Curbside parking is prohibited along both sides of Spring Road in the Project vicinity. Separate exclusive bicycle lanes are provided in each direction along Spring Road, except between Flinn Avenue - $2^{\text {nd }}$ Street and Los

Angeles Avenue. Spring Road is posted for a 45 miles per hour speed limit north of High Street - Princeton Avenue and is posted for a 40 miles per hour speed limit south of High Street Princeton Avenue near the Project Site.

Casey Road is an east-west roadway that is located north of the Project Site. One through travel lane is provided in each direction on Casey Road in the Project vicinity. Separate left-turn and right-turn lanes are provided in the eastbound direction on Casey Road at the Moorpark Avenue - Walnut Canyon Road intersection. Curbside parking is prohibited along the north side of Casey Road in the Project vicinity. Curbside parking is prohibited along the south side of Casey Road from 10:00 PM to 6:00 AM in the Project vicinity. Casey Road is posted for a 25 miles per hour speed limit near the Project Site.

Everett Street is an east-west roadway that borders the Project Site to the south. Everett Street extends from Moorpark Avenue on the west to Magnolia Street - Valley Road on the east. One through travel lane is provided in each direction on Everett Street in the Project vicinity. Separate exclusive left-turn and right-turn lanes are provided in the westbound direction on Everett Street at the Moorpark Avenue intersection. Curbside parking is allowed along both sides of Everett Street within the Project study area. There is no posted speed limit on Everett Street within the Project study area, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code Section 22352(b)(1).

Charles Street is an east-west roadway that is located south of the Project Site. One through travel lane is provided in each direction on Charles Street in the Project vicinity. Curbside parking is allowed along both sides of Charles Street within the Project study area. Charles Street is posted for a 25 miles per hour speed limit near the Project Site.

High Street is an east-west roadway that is located south of the Project Site. East of Spring Road, High Street becomes Princeton Avenue. High Street extends from just west of Moorpark Avenue to Spring Road on the east. One through travel lane is provided in each direction on High Street in the Project vicinity. A separate exclusive left-turn lane is provided in the eastbound direction on High Street at the Spring Road intersection. A separate exclusive rightturn lane is provided in the westbound direction on High Street at the Moorpark Avenue intersection and a separate exclusive right-turn lane is provided in the eastbound direction on High Street at the Spring Road intersection. Two-hour parking is provided from 6:00 AM to 6:00 PM along both sides of High Street from Moorpark Avenue to Spring Road in the Project vicinity. Separate exclusive bicycle lanes are provided in each direction along High Street between Moorpark Avenue and Spring Road. High Street is posted for a 30 miles per hour speed limit near the Project Site.

Princeton Avenue is an east-west roadway that is located south of the Project Site. West of Spring Road, Princeton Avenue becomes High Street. Princeton Avenue extends from Spring Road on the west to Campus Park Drive on the east. One through travel lane is provided in the eastbound direction on Princeton Avenue in the Project vicinity. Two through travel lanes are provided in the westbound direction on Princeton Avenue just east of Spring Road. Separate exclusive left-turn and right-turn lanes are provided in the westbound direction on Princeton

Avenue at the Spring Road intersection. Curbside parking is prohibited along both sides of Princeton Avenue in the Project vicinity. Princeton Avenue is posted for a 40 miles per hour speed limit near the Project Site.

Poindexter Avenue is an east-west roadway that is located south of the Project Site. One through travel lane is provided in each direction on Poindexter Avenue in the Project vicinity. Separate exclusive left-turn and right-turn lanes are provided in the eastbound direction on Poindexter Avenue at the Moorpark Avenue intersection. Curbside parking is prohibited along both sides of Poindexter Avenue in the Project vicinity. Separate exclusive bicycle lanes are provided in each direction along Poindexter Avenue in the Project vicinity. Poindexter Avenue is posted for 40 miles per hour speed limit. However, just west of Moorpark Avenue, Poindexter Avenue is posted for a 25 miles per hour speed limit to reflect a 25 miles per hour school zone.
$1^{s t}$ Street is an east-west roadway that is located south of the Project Site. One through travel lane is provided in each direction on ${ }^{\text {st }}$ Street in the Project vicinity. A separate exclusive leftturn lane is provided in the westbound direction on $1^{\text {st }}$ Street at the Moorpark Avenue intersection. Curbside parking is allowed along both sides of 1st Street within the Project study area. There is no posted speed limit on $1^{\text {st }}$ Street within the Project study area, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code Section 22352(b)(1).

### 4.4 Public Bus Transit Service

Public bus transit service in the Project study area is currently provided by Moorpark City Transit, Moorpark Paratransit, Moorpark Senior Dial-A-Ride, and the Ventura County Transportation Commission (VCTC). A summary of the existing transit routes that have fixed timetables, including the transit route, destinations and peak hour headways, is presented in Table 4-1. The existing public transit routes in the proposed Project Site vicinity for weekday service are illustrated in Figure 4-2. The public transit route in the proposed Project Site vicinity for Saturday service is illustrated in Figure 4-3 per the Moorpark City Transit Evaluation. ${ }^{1}$

[^14]| EXISTING PUBLIC TRANSIT ROUTES [1] |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 17-May-21 |  |  |
| ROUTE | DESTINATIONS | ROADWAY(S) <br> NEAR SITE | No. OF BUSES dURING PEAK HOUR |  |  |
|  |  |  | DIR | AM | PM |
| Moorpark City Transit Route 1 | Roundtrip from Moorpark College <br> (via Campus Park Drive, Princeton Avenue, High Street, Moorpark Avenue, Tierra Rejada Road, and Spring Road) | High Street, Moorpark Avenue, and Spring Road | $\begin{aligned} & \text { EB } \\ & \text { WB } \end{aligned}$ | 1 | $1$ |
| Moorpark City Transit Route 2 | Roundtrip from Moorpark College <br> (via Campus Park Drive, Princeton Avenue, High Street, Spring Road, Tierra Rejada Road, and Moorpark Avenue) | High Street, Moorpark Avenue, and Spring Road | $\begin{gathered} \text { EB } \\ \text { WB } \end{gathered}$ | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |
| VCTC Route 70 | Simi Valley to Thousand Oaks <br> (via SR-1 18 Freeway, Princeton Avenue, High Street, Moorpark Avenue, Los Angeles Avenue, and SR-23 Freeway) | High Street, Moorpark Avenue | $\begin{aligned} & \text { NB } \\ & \text { SB } \end{aligned}$ | $\begin{aligned} & 1 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ |
| VCTC Route 77 | Simi Valley to Ventura (via SR-118 Freeway, Princeton Avenue, High Street, Los Angeles Avenue, Somis Road and US-101 Freeway) | High Street, Moorpark Avenue | $\begin{gathered} \text { EB } \\ \text { WB } \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | $0$ |
|  |  |  | Total | 5 | 5 |

[^15]



### 5.0 Vehicle Mles Traveled Assessment

### 5.1 Introduction

VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT is a measure of the use and efficiency of the transportation network. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round-trip) travel and is often estimated for a typical weekday for the purposes of measuring transportation impacts.

In September 2013, the Governor's Office signed Senate Bill 743 (SB 743), starting a process that fundamentally changes the way transportation impact analysis is conducted under the California Environmental Quality Act. Within the State's CEQA Guidelines, these changes include the elimination of auto delay, LOS, and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant traffic impacts. SB 743 identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions.

The City is in the process of developing new traffic study guidelines to identify VMT as the primary metric for determining transportation impacts of development projects. The new guidelines will include VMT guidelines and thresholds for measuring transportation impacts under CEQA. It is LLG's understanding that the VMT guidelines will be prepared based on the recommendations provided in the technical advisory issued by the Governor's Office of Planning and Research (OPR). ${ }^{2}$

### 5.2 Project VMT

The transportation model consultant Iteris was engaged to prepare a calculation of VMT for purposes of evaluating the Project's VMT effect. The memorandum prepared by Iteris providing details of its VMT analysis of the Project is provided in Appendix $\boldsymbol{A}$.

As indicated in the Iteris memorandum, the Ventura County Transportation Model (VCTM) was utilized to generate the VMT outputs. As the Project is a residential development, the appropriate VMT metric is calculated on a per capita basis, consistent with the OPR. As detailed in the Iteris memorandum, per capita VMT was determined at the Project Site, as well as on a Citywide basis. The comparison of the Project per capita VMT and the Citywide per capita VMT allows for an assessment of the relative VMT impacts of the Project.

[^16]Based on the VCTM, the Project Site is located within Traffic Analysis Zone (TAZ) 60129101. As indicated in the Iteris memorandum, the TAZ-level daily VMT per capita for the Project was determined to be 19.58 miles per capita. It is noted that the calculation does not consider the VMT-reducing effects associated with the Project's location within a half-mile walking distance of the Moorpark Metrolink Station, which is considered to be a Major Transit Stop as defined by CEQA (Public Resources Code, §21064.3).

In addition to the Project per capita VMT, the Iteris memorandum provides the Citywide average daily VMT per capita, which was determined to be 20.54 miles.

Based on the findings in the Iteris memorandum and in consideration of the OPR technical advisory, the VMT impacts of the Project are determined to be less than significant based on:

- The Project's daily VMT per capita is calculated to be less than the Citywide average daily VMT per capita.
- The OPR technical advisory recommends that "lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are mix of these uses) proposed within $1 / 2$ mile of an existing major transit stop or an existing stop along a high quality transit corridor will have a less-than-significant impact on VMT."

Based on the finding of a less than significant VMT impact for the Project, no mitigation measures are required or recommended.

### 6.0 Traffic Counts

Due to the Covid-19 pandemic, traffic count data could not be collected at the study intersections. Therefore, historical data at the study intersections, with appropriate modifications, was utilized to represent current (pre-pandemic) traffic volume conditions. For this traffic analysis, the following techniques were used to estimate current year (2021) peak hour turning movement traffic volumes at the study intersections:

- Walnut Canyon Road - Moorpark Avenue / Casey Road, Moorpark Avenue / High Street, Moorpark Avenue / Poindexter Avenue - $1^{\text {st }}$ Street, Spring Road / High Street Princeton Avenue: Peak hour traffic volume data collected at these intersections in 2019 and referenced from a related development project ${ }^{3}$ (the Hitch Ranch study) were increased by a $1.0 \%$ annual traffic growth rate through the year 2021 to estimate current year traffic volumes. Further discussion of the annual traffic growth rate is provided in Section 8.0.
- Moorpark Avenue / Everett Street, Moorpark Avenue / Charles Street, Walnut Street / High Street, Spring Road / Charles Street: Peak hour traffic volume data at these intersections were referenced from a prior traffic study prepared for the Project in 2016. ${ }^{4}$ The peak hour traffic volume data in the 2016 study was determined from peak hour traffic count data collected at these intersections in 2013. The traffic count data from 2013 was increased by a two ( $2.0 \%$ ) annual traffic growth rate through the year 2016. The traffic volumes along Moorpark Avenue were then further adjusted to account for truck traffic during the AM and PM peak hours. It is estimated that trucks represent approximately 15 percent ( $15 \%$ ) and 10 percent ( $10 \%$ ) of the AM and PM peak hour traffic volumes, respectively, on Moorpark Avenue. The percentage of trucks, as well as a passenger car equivalent (PCE) factor of 3.0 was utilized to adjust the traffic volumes to reflect truck traffic along Moorpark Avenue and estimate the 2016 traffic volumes. The 2016 peak hour traffic volume data at these intersections were then increased by a $1.0 \%$ annual traffic growth rate through the year 2021 to estimate current year traffic volumes.

The existing weekday AM and PM peak hour traffic volumes at the eight study intersections are summarized in Table 6-1. The existing traffic volumes at the study intersections during the AM and PM peak hours are shown in Figures 6-1 and 6-2, respectively. Summary data worksheets of the historical traffic counts at the study intersections are contained in Appendix $\boldsymbol{B}$.

[^17]Table 6-1
EXISTING TRAFFIC VOLUMES [1]

| NO. | INTERSECTION | DATE | DIR | AM PEAK HOUR |  | PM PEAK HOUR |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | BEGAN | VOLUME [2], [3] | BEGAN | VOLUME [2], [3] |
| 1 | Moorpark Avenue - Walnut Canyon Road / Casey Road | 04/17/2019 | NB <br> SB <br> EB <br> WB | 7:45 | $\begin{array}{r} 422 \\ 430 \\ 285 \\ 0 \end{array}$ | 4:30 | $\begin{array}{r} 411 \\ 202 \\ 101 \\ 0 \end{array}$ |
| 2 | Moorpark Avenue / Everett Street | 06/12/2013 | NB <br> SB <br> EB <br> WB | 7:30 | $\begin{array}{r} 593 \\ 673 \\ 0 \\ 19 \end{array}$ | 4:30 | $\begin{array}{r} 347 \\ 291 \\ 0 \\ 15 \end{array}$ |
| 3 | Moorpark Avenue / Charles Street | 06/12/2013 | NB <br> SB <br> EB <br> WB | 7:45 | $\begin{array}{r} 606 \\ 642 \\ 6 \\ 49 \end{array}$ | 4:30 | $\begin{array}{r} 374 \\ 294 \\ 39 \\ 38 \\ \hline \end{array}$ |
| 4 | Moorpark Avenue / High Street | 04/17/2019 | NB <br> SB <br> EB <br> WB | 7:45 | $\begin{array}{r} 467 \\ 593 \\ 32 \\ 367 \end{array}$ | 5:00 | $\begin{array}{r} 623 \\ 313 \\ 65 \\ 412 \end{array}$ |
| 5 | Moorpark Avenue / <br> Poindexter Avenue - 1st Street | 04/03/2019 | NB <br> SB <br> EB <br> WB | 8:00 | $\begin{array}{r} 360 \\ 633 \\ 291 \\ 79 \end{array}$ | 4:30 | $\begin{array}{r} 448 \\ 572 \\ 392 \\ 53 \end{array}$ |
| 6 | Walnut Street / High Street | 06/12/2013 | NB <br> SB <br> EB <br> WB | 7:30 | $\begin{array}{r} 0 \\ 26 \\ 361 \\ 402 \end{array}$ | 4:30 | $\begin{array}{r} 0 \\ 47 \\ 499 \\ 416 \end{array}$ |
| 7 | Spring St / <br> Charles St | 06/12/2013 | NB <br> SB <br> EB <br> WB | 7:15 | $\begin{array}{r} 417 \\ 1,007 \\ 67 \\ 76 \end{array}$ | 4:30 | $\begin{array}{r} 994 \\ 569 \\ 62 \\ 32 \\ \hline \end{array}$ |
| 8 | Spring Street / <br> Princeton Avenue | 04/03/2019 | NB <br> SB <br> EB <br> WB | 7:45 | $\begin{array}{r} 571 \\ 1,012 \\ 423 \\ 497 \end{array}$ | 4:30 | $\begin{array}{r} 1,076 \\ 553 \\ 506 \\ 866 \end{array}$ |

[1] National Data \& Surveying Services
[2] Traffic count data from 2013 was increased by a $2.0 \%$ annual traffic growth rate through the year 2016. The 2016 volumes were then increased by a $1.0 \%$ annual growth rate through the year 2021.
[3] Traffic count data from 2019 was increased by a $1.0 \%$ annual traffic growth rate through the year 2021.



### 7.0 Traffic Forecasting Methodology

In order to estimate the traffic operational characteristics related to the proposed Project, a multistep process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the Project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound Project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of Project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and Project traffic assignments developed, the traffic effects of the proposed Project are isolated by comparing operational (i.e., Levels of Service) conditions at the selected key intersections using existing and expected future traffic volumes without and with forecast Project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

### 7.1 Project Traffic Generation

Traffic volumes expected to be generated by the proposed Project during the AM and PM peak hours, as well as on a daily basis, were estimated using rates published in the Institute of Transportation Engineers' (ITE) Trip Generation manual, 10 ${ }^{\text {th }}$ Edition, 2017. Traffic volumes expected to be generated by the proposed Project were based upon number of dwelling units. ITE Land Use Code 220 (Multifamily Housing [Low-Rise]) trip generation average rates were used to forecast the traffic volumes expected to be generated by the proposed Project.

The trip generation forecast for the proposed Project is summarized in Table 7-1. As presented in Table 7-1, the proposed Project is expected to generate a net increase of 28 vehicle trips (6 inbound trips and 22 outbound trips) during the AM peak hour. During the PM peak hour, the proposed Project is expected to generate a net increase of 34 vehicle trips ( 21 inbound trips and 13 outbound trips). Over a 24 -hour period, the proposed Project is forecast to generate a net increase of 439 daily trip ends during a typical weekday (approximately 220 inbound trips and 219 outbound trips).
Table 7-1
PROJECT TRIP GENERATION [1]

|  |  |  |  |  |  | 16-May-21 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LAND USE | SIZE | DAILY <br> TRIP ENDS [2] <br> VOLUMES | $\begin{gathered} \hline \text { AM PEAK HOUR } \\ \text { VOLUMES [2] } \\ \hline \end{gathered}$ |  |  | PM PEAK HOUR VOLUMES [2] |  |  |
|  |  |  | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Proposed Project |  |  |  |  |  |  |  |  |
| Condominiums [3] | 60 DU | 439 | 6 | 22 | 28 | 21 | 13 | 34 |
| NET PROJECT TRIPS |  | 439 | 6 | 22 | 28 | 21 | 13 | 34 |

[1] Source: ITE "Trip Generation Manual", 10th Edition, 2017.
[3] ITE Land Use Code 220 (Multifamily Housing [Low-Rise]) trip generation average rates.

- Daily Trip Rate: 7.32 trips/dwelling unit; $50 \%$ inbound $/ 50 \%$ outbound
- AM Peak Hour Trip Rate: 0.46 trips/dwelling unit; $23 \%$ inbound $/ 77 \%$ outbound
- PM Peak Hour Trip Rate: 0.56 trips/dwelling unit; $63 \%$ inbound $/ 37 \%$ outbound


### 7.2 Project Traffic Distribution and Assignment

Project generated traffic was assigned to the local roadway system based on a traffic distribution pattern which accounted for the proposed Project land uses, the planned Project Site access schemes, existing traffic patterns, characteristics of the surrounding roadway system, and nearby population and employment centers.

The general, directional traffic distribution patterns for the proposed Project are presented in Figure 7-1. The forecast net new weekday AM and PM peak hour traffic volumes at the study intersections associated with the proposed Project are presented in Figures 7-2 and 7-3, respectively. The traffic volume assignments presented in Figures $7-2$ and $7-3$ reflect the traffic distribution characteristics shown in Figure 7-1 and the Project traffic generation forecast presented in Table 7-1.





### 8.0 Cumulative Development Projects

A forecast of on-street traffic conditions prior to occupancy of the Project was prepared by incorporating the potential trips associated with other known development projects (related projects) in the area. With this information, the potential impact of the Project can be evaluated within the context of the cumulative impact of all ongoing development. The related projects research was based on information on file at the City of Moorpark Community Development Department. The list of related projects in the Project Site area is presented in Table $\mathbf{8} \mathbf{- 1}$. The location of the related projects is shown in Figure 8-1.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the ITE Trip Generation Manual. The related projects' respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in Table 8-1. The distribution of the related projects traffic volumes to the study intersections during the weekday AM and PM peak hours are displayed in Figures $\mathbf{8 - 2}$ and $\mathbf{8 - 3}$, respectively.

### 8.1 Ambient Traffic Growth Factor

In order to account for unknown related projects not included in this analysis, the existing traffic volumes were increased at an annual rate of 1.0 percent (1.0\%) per year to the year 2024 (i.e., the anticipated year of Project build-out). The ambient growth factor was determined in accordance with the ambient growth factor of $1.0 \%$ identified in the Hitch Ranch study.
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| $\begin{array}{\|l} \hline \text { MAP } \\ \text { NO. } \\ \hline \end{array}$ | PROJECT NAME／ PROJECT NUMBER | $\begin{gathered} \text { PROJECT } \\ \text { STATUS } \end{gathered}$ | ADDRESS／ <br> LOCATION | LAND USE DATA |  | $\begin{array}{\|c\|} \hline \text { PROJECT } \\ \text { DATA } \\ \text { SOURCE } \\ \hline \end{array}$ | DAILY <br> TRIP ENDS［2］ <br> VOLUMES | $\begin{aligned} & \hline \text { AM PEAK HOUR } \\ & \text { VOLUMES [2] } \\ & \hline \end{aligned}$ |  |  | $\begin{aligned} & \hline \text { PM PEAK HOUR } \\ & \text { VOLUMES [2] } \\ & \hline \end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | LAND－USE | SIZE |  |  | IN | OUT | TOTAL | IN | OUT | TOTAL |
| 1 | Pacific Arroyo | Approved | South of Los Angeles Avenue East of Maureen Lane | Single－Family Homes | 284 DU | ［3］ | 2，681 | 53 | 157 | 210 | 177 | 104 | 281 |
| 2 | Vistas at Moorpark | Approved | East of Walnut Canyon Road North of Wicks Road | Single－Family Homes | 110 DU | ［3］ | 1，038 | 20 | 61 | 81 | 69 | 40 | 109 |
| 3 | Canyon Crest | Approved | Marine View Drive East of Walnut Canyon Road at Championship Drive | Single－Family Homes | 21 DU | ［3］ | 198 | 4 | 12 | 16 | 13 | 8 | 21 |
| 4 | Essex Moorpark Apartments | Approved | South of Casey Road West of Walnut Canyon Road | Apartments | 200 DU | ［4］ | 1，464 | 21 | 71 | 92 | 71 | 41 | 112 |
| 5 | Green Island Villas | Approved | 635 Los Angeles Avenue | Condominiums | 69 DU | ［4］ | 505 | 7 | 25 | 32 | 25 | 14 | 39 |
| 6 | Patriot Commerce Center | Approved | West of SR－23 Freeway <br> East of Miller Parkway South of Moorpark Marketplace | Industrial Building | 94，001 GSF | ［5］ | 466 | 58 | 8 | 66 | 8 | 51 | 59 |
| 7 | TT 5906 | Approved | North of Union Pacific Railroad Tracks West of Gabbert Road | Industrial Park | 1，568，000 GSF | ［6］ | 5，284 | 508 | 119 | 627 | 132 | 495 | 627 |
| 8 | Moorpark West Studios | Approved | Los Angeles Avenue West of SCE Substation | Office <br> Production Sound Stages Security Personnel Trips | $\begin{aligned} 112,850 & \text { GSF } \\ 9 & \text { Stages } \end{aligned}$ | ［7］ <br> ［7］ <br> ［7］ | $\begin{array}{r} 1,242 \\ 1,836 \\ 30 \end{array}$ | 153 nom． nom． | 21 <br> nom． <br> nom． | 174 nom． nom． | $\begin{gathered} 28 \\ \text { nom. } \\ \text { nom. } \end{gathered}$ | $140$ <br> nom． <br> nom． | 168 nom． nom． |
| 9 | Casey Road Senior Community | Approved | North of Casey Road West of Walnut Canyon Road | Senior Adult Housing | 390 DU | ［8］ | 1，443 | 27 | 51 | 78 | 56 | 45 | 101 |
| 10 | High Street Station | Approved | 226 High Street | Apartments Commercial | $\begin{array}{r} 79 \mathrm{DU} \\ 13,656 \mathrm{GSF} \end{array}$ | $\begin{aligned} & {[4]} \\ & {[9]} \end{aligned}$ | $\begin{aligned} & 578 \\ & 516 \end{aligned}$ | $\begin{aligned} & 8 \\ & 8 \end{aligned}$ | $\begin{array}{r} 28 \\ 5 \end{array}$ | $\begin{aligned} & 36 \\ & 13 \end{aligned}$ | $\begin{aligned} & 28 \\ & 25 \end{aligned}$ | $\begin{aligned} & 16 \\ & 27 \end{aligned}$ | $\begin{aligned} & 44 \\ & 52 \end{aligned}$ |
| 11 | Hitch Ranch Specific Plan | Proposed | North of Union Pacific Railroad Tracks West of Terminus of Casey Road | Apartments Single－Family Homes Public Park | $\begin{aligned} 299 & \text { DU } \\ 456 & \text { DU } \\ 5 & \text { Acres } \end{aligned}$ | ［10］ | 6，948 | 117 | 359 | 476 | 389 | 250 | 639 |
| 12 | North Ranch | Proposed | 5979 Gabbert Road | Single－Family Homes | 139 DU | ［3］ | 1，312 | 26 | 77 | 103 | 87 | 51 | 138 |
| 13 | Beltramo Ranch | Proposed | South of Los Angeles Avenue East of Tierra Rejada Road West of Maureen Lane | Single－Family Homes | 52 DU | ［3］ | 491 | 10 | 28 | 38 | 32 | 19 | 51 |
| 14 | 4875 Spring Road Residential Project | Approved | 4875 Spring Road | Condominiums | 95 DU | ［4］ | 695 | 10 | 34 | 44 | 33 | 20 | 53 |
| 15 | Oakmont Senior Living | Under Construction | 13960 Peach Hill Road | Senior Adult Housing | 77 DU | ［8］ | 285 | 5 | 10 | 15 | 11 | 9 | 20 |





### 9.0 Traffic Operations Analysis Methodology

The eight study intersections were evaluated using the Intersection Capacity Utilization (ICU) method of analysis which determines Volume-to-Capacity $(v / c)$ ratio on a critical lane basis. The overall intersection $v / c$ ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. The Levels of Service vary from LOS A (free flow) to LOS F (jammed condition). As a design constraint for the City of Moorpark, it is intended that a LOS of C or better be maintained. A description of the ICU method and corresponding Levels of Service is provided in Appendix $C$.

### 9.1 Intersection Operations Criteria

The relative effects of the added Project traffic volumes expected to be generated by the proposed Project during the AM and PM peak hours were evaluated based on analysis of future operating conditions at the eight study intersections, without and with the proposed Project. The previously discussed capacity analysis procedures were utilized to evaluate the future $v / c$ relationships and service level characteristics at each study intersection.

As the City is in the process of developing new traffic study guidelines, the potential effects of Project-generated traffic operations at each study intersection were identified using guidelines included in the City of Moorpark's Guidelines for Preparing Traffic and Circulation Studies, 1993. According to the City's guidelines, a LOS degradation of one level or greater attributable to the Project will be considered significant enough to require improvement measures. A LOS degradation of less than one level may be considered significant, depending on circumstances. As a design constraint, it is intended that a LOS of C or better be maintained.

Based on City of Moorpark criteria, lane capacities of 1,500 vehicles per hour (vph) for left-turn and right-turn lanes, $1,600 \mathrm{vph}$ for through lanes, and $2,600 \mathrm{vph}$ for dual left or right turn lanes were used in the ICU calculations. Additionally, a clearance interval of 0.10 is also included in the ICU calculations.

It is noted that the City's thresholds discussed above apply for the purpose of site circulation and conformance with the General Plan but are not intended for CEQA. The VMT assessment is presented in Section 5.0 herein for CEQA purposes.

### 9.2 Traffic Analysis Scenarios

LOS calculations have been prepared for the following scenarios for the eight study intersections located within the City of Moorpark:
(a) Existing (2021) conditions.
(b) Condition (a) with completion and occupancy of the proposed Project.
(c) Condition (b) with implementation of Project measures where necessary.
(d) Condition (a) plus one percent (1.0\%) annual ambient traffic growth through year 2024 and with completion and occupancy of the related projects (i.e., future cumulative baseline).
(e) Condition (d) with completion and occupancy of the Project.
(f) Condition (e) with implementation of cumulative improvement measures, where necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in capacity utilization at the eight study intersections.

Summaries of the $v / c$ ratios and LOS values for the study intersections during the AM and PM peak hours are shown in Table 9-1. The ICU data worksheets for the analyzed intersections are contained in Appendix C.
Table 9－1
SUMMARY OF VOLUME TO CAPACITY RATIOS

|  |  | $\begin{aligned} & \frac{1}{z} \frac{4}{z} \\ & 8.8 \\ & 8.8 \\ & 0.8 \end{aligned}$ | $\begin{aligned} & \frac{y}{z} \frac{4}{z} \\ & 8.8 \\ & 8.8 \\ & 0.0 \end{aligned}$ |  |  | $\begin{aligned} & \frac{y}{z} \frac{4}{z} \\ & 8.8 \\ & 8.8 \\ & 0.0 \end{aligned}$ | $\begin{aligned} & \frac{4}{z} \frac{4}{z} \\ & 8.8 \\ & 0.0 \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\stackrel{\rightharpoonup}{\infty} \stackrel{0}{0}$ | $\stackrel{ }{6} \text { of }$ | $\stackrel{\circ}{0} \text { No }$ |  | $\begin{gathered} \varangle \infty \\ \text { 志 } \\ \text { 合 } \end{gathered}$ |  |  |
|  |  |  |  | $\therefore \%$ $8$ |  | 云足 oo o |  | $\begin{aligned} & 80 \\ & \text { zo } \\ & \text { 웅 웅 } \end{aligned}$ |
|  | $\begin{aligned} & \text { 山U } \\ & \text { 志管 } \end{aligned}$ | $\begin{aligned} & \bar{\infty} \\ & \stackrel{\infty}{\circ} \stackrel{0}{0} \\ & \hline 0 \end{aligned}$ | $\stackrel{\cong}{\infty}$ | ［I］［I］ No 웅 |  |  |  | ш $\Omega$ |
|  |  | 会侖侖 | $\begin{aligned} & \text { E. } \\ & \text { E } \\ & \mathbf{O} \\ & \hline 0 \end{aligned}$ | 以（1） 중 |  |  |  | ш <br>  |
|  | $\begin{aligned} & \circ \circ \\ & \frac{2}{z} \\ & \text { 항 } \\ & 0.0 \end{aligned}$ |  | $\begin{aligned} & \hat{z} 0 \\ & \text { n } \\ & \text { no 웅 } \end{aligned}$ | ${ }_{z}^{\circ}$ Boㅇㅇ응 |  |  | $\begin{aligned} & \circ \circ \\ & \frac{2}{z} \\ & 80 \\ & 80.0 \end{aligned}$ |  |
|  | 훙 | $\begin{aligned} & \text { 《 } \\ & \text { 解管 } \end{aligned}$ |  | $๓ ๓$ <br> 骨： | F. | $\begin{aligned} & \ll \\ & \text { 둥 } \\ & \text { Bo } \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & 0 \end{aligned}$ |  |
|  |  |  |  | $๓ ๓$ <br> 遇资 |  | $\begin{aligned} & \ll \\ & \text { 应导 } \end{aligned}$ |  |  |
| 눌 | $\sum \sum^{\sum}$ | $\sum_{<} \sum$ | $\sum \sum_{<}$ | $\sum \sum_{<}$ | $\sum_{<} \sum$ | $\sum \sum_{<}$ | $\sum \sum_{<}$ | $\sum \sum_{<}$ |
|  |  |  |  |  |  |  |  |  |
| 8 | － | $\sim$ | m | ${ }^{+}$ | in | $\bigcirc$ | － | $\infty$ |

### 10.0 City of Moorpark Traffic Analysis

The traffic analysis prepared for the eight study intersections located within the City of Moorpark using the ICU methodology and application of the City of Moorpark traffic operations criteria is summarized in Table 9-1. The ICU data worksheets for the analyzed intersections are contained in Appendix $C$.

### 10.1 Existing Conditions

### 10.1.1 Existing Conditions

As indicated in column [1] of Table 9-1, seven of the eight study intersections located within the City of Moorpark are presently operating at LOS C or better during the AM and PM peak hours under existing conditions. The following intersection is presently operating at LOS D or worse during the peak hours shown below under existing conditions:

- Int. No. 5: Moorpark Avenue /

Poindexter Avenue - $1^{\text {st }}$ Street

AM Peak Hour: $v / c=0.834$, LOS D
PM Peak Hour: $v / c=0.917$, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in Figures 6-1 and 6-2, respectively.

### 10.1.2 Existing with Project Conditions

As shown in column [2] of Table 9-1, application of the City's operations criteria to the "Existing with Project" scenario indicates that Project-related traffic is not expected to exceed the traffic operations criteria at any of the eight study intersections. It is noted that the Walnut Canyon Road - Moorpark Avenue / Casey Road intersection degrades from LOS B to LOS C in the AM peak hour with the addition of Project-related traffic. However, since this intersection does not degrade to LOS D or worse, Project-related traffic is not expected to exceed the traffic operations criteria at this intersection. In addition, it is noted that while the Moorpark Avenue / Poindexter Avenue - 1st Street intersection remains at LOS D and LOS E in the AM and PM peak hours, respectively, Project-related traffic is not expected to exceed the traffic operations criteria since the LOS does not degrade by one level or greater from existing conditions.

Incremental, but not significant changes in the calculated $v / c$ ratios are noted at the remaining six study intersections. Therefore, no measures are required or recommended with respect to these intersections under the "Existing with Project" conditions. The existing with project traffic volumes at the study intersections during the AM and PM peak hours are shown in Figures 10-1 and 10-2, respectively.





### 10.2 Future Conditions

### 10.2.1 Future Cumulative Baseline Conditions

The future cumulative baseline conditions were forecast based on the addition of traffic generated by the completion and occupancy of related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The $v / c$ ratios at all of the study intersections are incrementally increased with the addition of ambient traffic and traffic generated by the related projects listed in Table 8-1.

As presented in column [3] of Table 9-1, four of the eight study intersections located within the City of Moorpark are expected to operate at LOS C or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related project traffic under the future cumulative baseline conditions. The following study intersections are expected to operate at LOS D or worse during the peak hours shown below under future cumulative baseline conditions:

- Int. No. 1: Walnut Canyon Road -

AM Peak Hour: $v / c=1.044$, LOS F
Moorpark Avenue / Casey Road

- Int. No. 4: Moorpark Avenue /

High Street
AM Peak Hour: $v / c=0.931$, LOS E
PM Peak Hour: $v / c=0.931$, LOS E

- Int. No. 5: Moorpark Avenue /

Poindexter Avenue - $1^{\text {st }}$ Street
AM Peak Hour: $v / c=1.072$, LOS F
PM Peak Hour: $v / c=1.218$, LOS F

- Int. No. 8: Spring Road /

High Street - Princeton Avenue
AM Peak Hour: $v / c=0.919$, LOS E
PM Peak Hour: $v / c=0.886$, LOS D
The future cumulative baseline (existing, ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in Figures 103 and 10-4, respectively.

### 10.2.2 Future Cumulative with Project Conditions

The "Future Cumulative with Project" conditions were forecast based on the addition of traffic generated by the Project plus the addition of ambient traffic and completion and occupancy of related projects. As shown in column [4] of Table 9-1, application of the City's operations criteria to the "Future Cumulative with Project" scenario indicates that Project-related traffic is not expected to exceed the traffic operations criteria at any of the eight study intersections. It is noted that the Moorpark Avenue / Everett Street intersection degrades from LOS A to LOS B in the PM peak hour with the addition of Project-related traffic. However, since this intersection does not degrade to LOS D or worse, Project-related traffic is not expected to exceed the traffic operations criteria at this intersection. In addition, it is noted that while the four study intersections noted above remain at LOS D or worse, Project-related traffic is not expected to




exceed the traffic operations criteria at these intersections since the LOS does not degrade by one level or greater from future cumulative baseline conditions.

The future cumulative with project (existing, ambient growth, related projects and Project) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in Figures 10-5 and 10-6, respectively.

### 10.3 Future Cumulative Improvement Measures

As indicated in the previous section, four of the eight study intersections are anticipated to operate at LOS D or worse during the AM and/or PM peak hours under future cumulative baseline and "Future Cumulative with Project" conditions. While it has been concluded that Project-related traffic is not expected to exceed the traffic operations criteria at any of the eight study intersections, a review of potential improvement measures, which will improve the overall operating conditions at these locations, has been conducted. In general, off-site improvement measures identified for future cumulative conditions should not be the sole responsibility of an individual project, but rather the development may contribute towards the cost of implementation of such improvements based on the project's share or usage of the facilities being improved. It is recognized that as a design constraint for the City of Moorpark, it is intended that a LOS C or better be maintained to the extent possible. The cumulative improvement measures recommended at the study intersections are based on previous capital projects that have yet to be implemented and are described in the following paragraphs.

## Intersection No. 1: Walnut Canyon Road - Moorpark Avenue / Casey Road

The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure at the Walnut Canyon Road-Moorpark Avenue / Casey Road intersection includes the traffic signal modification to provide an eastbound right-turn overlap phase to coincide with the northbound left-turn phase.

As shown in column [5] of Table 9-1, implementation of the recommended cumulative improvement measures is expected to improve the $v / c$ ratio at this intersection to 0.807 (LOS D) from 1.044 (LOS F) during the AM peak hour under "Future Cumulative with Project" conditions.

## Intersection No. 4: Moorpark Avenue / High Street

The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure involves the widening of Moorpark Avenue to provide additional lanes between Casey Road and Third Street. The improvement measure at the Moorpark Avenue / High Street intersection includes the installation of additional northbound and southbound lanes as well as a traffic signal modification to provide a westbound right-turn overlap phase to coincide with the southbound left-turn phase. The resulting lane configurations on Moorpark Avenue at the




intersection on the northbound approach would consist of one shared left/through lane, one through lane and one right-turn only lane and on the southbound approach would consist of one left-turn only lane, one through lane and one shared through/right-turn lane.

As shown in column [5] of Table 9-1, implementation of the recommended cumulative improvement measures is expected to improve the $v / c$ ratio at this intersection to 0.766 (LOS C) from 0.938 (LOS E) during the AM peak hour and to 0.793 (LOS C) from 0.939 (LOS E) during the PM peak hour under "Future Cumulative with Project" conditions.

## Intersection No. 5: Moorpark Avenue / Poindexter Avenue - $1^{\text {st }}$ Street

The cumulative improvement measure at this location consists of the implementation of a previous City of Moorpark Public Works Department Capital Project. The improvement measure involves the widening of Moorpark Avenue to provide additional lanes between Casey Road and Third Street. The improvement measure at the Moorpark Avenue / Poindexter Avenue $-1^{\text {st }}$ Street intersection includes the installation of additional southbound and northbound lanes. The resulting lane configuration on Moorpark Avenue for both the southbound and northbound approaches to the intersection would consist of one left-turn lane, one through lane and one shared through/right-turn lane. In addition, the cumulative measure at this location would consist of the conversion of the eastbound right-turn only lane to a shared left/through/right-turn lane. The resulting lane configuration on Moorpark Avenue on the eastbound approach to the intersection would consist of one left-turn lane and one shared left/through/right-turn lane.

As shown in column [5] of Table 9-1, implementation of the recommended cumulative improvement measures is expected to improve the $v / c$ ratio at this intersection to 0.689 (LOS B) from 1.079 (LOS F) during the AM peak hour and to 0.802 (LOS D) from 1.226 (LOS F) during the PM peak hour under "Future Cumulative with Project" conditions.

## Intersection No. 8: Spring Road / High Street - Princeton Avenue

The cumulative improvement measure at this location consists of restriping the eastbound approach. The improvement involves restriping the eastbound right-turn only lane into a shared through and right-turn lane. The resulting lane configuration on High Street on the eastbound approach of the intersection would consist of one left-turn only lane, one through lane, and one shared through and right-turn lane.

As shown in column [5] of Table 9-1, implementation of the recommended cumulative improvement measures is expected to improve the $v / c$ ratio at this intersection to 0.893 (LOS D) from 0.921 (LOS E) during the AM peak hour and to 0.833 (LOS D) from 0.888 (LOS D) during the PM peak hour under "Future Cumulative with Project" conditions.

### 11.0 Fair Share ANaLYSIS

The methodology and the calculations of the Project's pro-rata percentage at the study intersections which require cumulative regional improvements are summarized in Table 11-1. The method used for these calculations was based on the sum of the total weekday morning and afternoon (AM and PM) peak hours Project-generated traffic volumes on the approaches to each affected study intersection divided by the Project plus other development (related) projects traffic volumes on those same approaches for the same AM and PM peak hours. It should be noted that existing traffic volumes are not included in the calculations.

As shown in Table 11-1, the proposed Project's fair share contribution toward the cumulative regional improvements ranges from $0.5 \%$ at the Walnut Canyon Road - Moorpark Avenue / Casey Road intersection to $3.3 \%$ at the Moorpark Avenue / High Street intersection.

Table 11-1
PRO-RATA PERCENTAGE OF CUMULATIVE IMPROVEMENT MEASURES

20-May-21

| Pro-Rata Percentage Methodology |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A project's pro-rata percentage of cumulative AM and PM peak hour traffic volumes. The It should be noted that existing traffic and <br> The following equation is provided to assist roadway mitigation improvement measures $P=\frac{V p}{V p+V c}$ | gation c ct's perc growth <br> culating | at study e share fic volu <br> ct +O <br> project <br> re: | rsect <br> erive are $n$ <br> ject <br> Relat <br> -rata <br> P <br> Vp <br> Vc | con <br> divi <br> nclu <br> ffic <br> Projec <br> cent <br> $=$ <br> $=$ <br> $=$ | ioned for the subject project ng project traffic by project p in the calculations. <br> Traffic <br> to implement <br> Project's pro-rate percentag measure <br> AM \& PM Peak Hour volu generated by the project Cumulative (other related p AM \& PM Peak Hour traffic | d be <br> ther <br> cum <br> the <br> ts) | ted using projects tra <br> mitigation <br> tion <br> itersection |
| Study Intersection(s) Calculations |  |  |  |  |  |  |  |
| Intersection | $\underset{\text { Traffi }}{\underline{\text { AV }}}$ | $\frac{\text { PM }}{\text { lumes }}$ |  |  | Calculation |  | entage <br> mpact |
| 1. Walnut Canyon Road - Moorpark Avenue / | $\begin{aligned} \mathrm{Vp} & = \\ \mathrm{Vc} & = \end{aligned}$ | $\frac{6}{1,299}$ |  |  | $\begin{gathered} 6 \\ \hline(6)+(1,299) \end{gathered}$ | $=$ | 0.5 \% |
| 4. Moorpark Avenue / <br> High Street | $\begin{aligned} \mathrm{Vp} & = \\ \mathrm{Vc} & = \end{aligned}$ | $\begin{gathered} 56 \\ \hline 1,644 \\ \hline \end{gathered}$ |  |  | $$ | $=$ | 3.3 \% |
| 5. Moorpark Avenue / Poindexter Avenue - 1st Street | $\begin{aligned} \mathrm{Vp} & = \\ \mathrm{Vc} & = \end{aligned}$ | $\begin{array}{r} 24 \\ \hline 814 \end{array}$ |  |  | $\begin{array}{cc}  & 24 \\ \hline(24) & +\quad(814 \quad) \end{array}$ | $=$ | 2.9 \% |
| 8. Spring Road / <br> High Street - Princeton Avenue | $\begin{aligned} & \mathrm{Vp}= \\ & \mathrm{Vc}= \end{aligned}$ | $\begin{gathered} 31 \\ \hline 1,333 \end{gathered}$ |  |  | $\begin{array}{cc}  & 31 \\ \hline(31)+(1,333) \end{array}$ | = | 2.3 \% |

### 12.0 CONClusions

This traffic analysis has been conducted to identify and evaluate the potential impacts of traffic generated by the proposed Everett Street Terraces Project. The City is in the process of developing new traffic study guidelines that will include VMT guidelines and thresholds for measuring transportation impacts under CEQA. A VMT assessment has therefore been prepared in accordance with the Governor's OPR technical advisory. Based on the guidance provided in the OPR advisory, VMT impacts of the Project are determined to be less than significant.

The City's current traffic study guidelines require that a Level of Service (LOS) analysis be performed for the purpose of identifying potential operational deficiencies at intersections in the vicinity of the Project Site. Accordingly, eight intersections were analyzed to determine changes in operations following occupancy and utilization of the proposed Project. It is concluded that the proposed Project is not anticipated to exceed operations criteria from the City of Moorpark at any of the study intersections under existing conditions.

The Project, along with the identified cumulative development projects, is anticipated to contribute to the degradation of intersection operations in the future cumulative traffic conditions. Potential cumulative improvement measures have been identified that are anticipated to improve the operating conditions. It is anticipated that the proposed Project would contribute funds on a fair-share basis towards the implementation of the cumulative measures.

## Appendix A

## ITERIS TECHNICAL MemORANDUM

# TECHNICAL MEMORANDUM 

To: Linscott, Law, and Greenspan (LLG) Engineers

From: Iteris, Inc.

Date: April 27, 2021

RE: Everett Street Terraces Project - Vehicle Miles Traveled Outputs

## INTRODUCTION

This memorandum presents Iteris' Vehicle Miles Traveled (VMT) analysis of the Everett Street Terraces project in the City of Moorpark. The Everett Street Terraces project consists of 60 residential condominium units. The project site is located at the northeast corner of the intersection of Moorpark Avenue and Everett Street.

CEQA analysis for determining potential significant transportation impacts from vehicles transitioned in 2020 from an automobile delay or capacity measure to a Vehicle Miles Traveled (VMT) metric as required by Senate Bill (SB) 743. VMT is an area-wide performance measure which helps compare the overall performance of a project or project alternatives and is also used as a metric to ultimately assess the transportation environmental impacts of a project. VMT is generally calculated using a travel demand model that captures the movement of all trips over a highway network. For this analysis, the time period was defined as a 24 hour period on a typical weekday.

## METHODOLOGY

Iteris utilized the Ventura County Transportation Model (VCTM) to generate VMT statistics. This land-use based model, which is a subarea model of the Southern California Association of Government's (SCAG) travel demand model, is consistent with the 2016 SCAG RTP/SCS travel-demand model assumptions. The model consists of a 2016 base year scenario and 2040 future year scenario. For the purposes of this analysis, the 2016 base year scenario was utilized.

The VCTM consists of a detailed traffic analysis zone (TAZ) structure in the City of Moorpark. The model consists of 19 TAZ's within the City. Figure 1 shows the location of the proposed project's TAZ (60129101).

Everett Terraces Project
CEQA Transportation Analysis City of Moorpark
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## VMT ANALYSIS

The proposed project is residential, thus VMT will be reported as Residential VMT per Capita, calculated as such: Home-Based Production VMT / Residential Population. In order to determine the project's potential level of impact, a new VCTM scenario including the proposed project land use within TAZ 60129101 was prepared, utilizing the existing/baseline year of the model. From this new model scenario output, the following three metrics were calculated:

- Countywide average daily VMT per capita; and
- Citywide average daily VMT per capita; and
- Project TAZ-level daily VMT per capita.

The new VCTM scenario resulted in the following outputs:

- Countywide average daily VMT per capita, for use within this analysis only, is 15.62 ; and
- Citywide average daily VMT per capita, for use within this analysis only, is 20.54; and
- Project TAZ-level daily VMT per capita is 19.58.


## Appendix B

## Historical Traffic Count Data

## Walnut Canyon Rd \& Casey Rd

## Peak Hour Turning Movement Count

ID: 19-05109-004
City: Moorpark


Total Vehicles (Noon)


Total Vehicles (PM)


| Walnut Canyon Rd |
| :---: |
| SOUTHBOUND |

Day: Wednesday
Date: 04/17/2019


Bikes (NOON)

$N / A \rightarrow\langle$ So $\leftarrow N / A$


Bikes (PM)


Intersection Turning Movement
Prepared by:
National Data \& Surveying Services
Project ID: CA13_5332_002 Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013

| City: City of Moorpark |  |  |  | AM |  |  |  |  |  | Date: 6/12/2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| NS/ EW Streets: | Moorpark Ave |  |  |  |  |  |  |  |  | Moorpark Ave |  |  | Everett St |  |  | Everett St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | $\begin{gathered} \mathrm{NL} \\ 0 \end{gathered}$ | $\begin{gathered} \text { NT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { NR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { SL } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{ST} \\ 1 \end{gathered}$ | $\begin{gathered} \text { SR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { EL } \\ 0 \end{gathered}$ | $\begin{gathered} \text { ET } \\ 0 \end{gathered}$ | $\begin{gathered} \text { ER } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WL } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WT } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WR } \\ 1 \end{gathered}$ | TOTAL |
| 7:00 AM |  | 25 | 1 | 2 | 45 |  |  |  |  | 1 |  | 1 | 75 |
| 7:15 AM |  | 26 | 1 | 0 | 56 |  |  |  |  | 1 |  | 1 | 85 |
| 7:30 AM |  | 52 | 1 | 3 | 83 |  |  |  |  | 2 |  | 2 | 143 |
| 7:45 AM |  | 128 | 0 | 1 | 100 |  |  |  |  | 1 |  | 3 | 233 |
| 8:00 AM |  | 137 | 1 | 2 | 134 |  |  |  |  | 1 |  | 6 | 281 |
| 8:15 AM |  | 91 | 0 | 3 | 140 |  |  |  |  | 0 |  | 2 | 236 |
| 8:30 AM |  | 59 | 3 | 1 | 74 |  |  |  |  | 4 |  | 1 | 142 |
| 8:45 AM |  | 44 | 0 | 0 | 39 |  |  |  |  | 3 |  | 0 | 86 |
| TOTAL VOLUMES : APPROACH \% 's : | $\begin{aligned} & \hline \mathrm{NL} \\ & 0 \\ & 0.00 \% \end{aligned}$ | $\begin{gathered} \hline \text { NT } \\ 562 \\ 98.77 \% \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { NR } \\ 7 \\ 1.23 \% \end{array}$ | $\begin{aligned} & \hline \text { SL } \\ & 12 \\ & 1.76 \% \end{aligned}$ | $\begin{gathered} \hline \text { ST } \\ 671 \\ 98.24 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { SR } \\ 0 \\ 0.00 \% \end{array}$ | $\begin{gathered} \hline \text { EL } \\ 0 \\ \text { \#DIV/O! } \end{gathered}$ | $\begin{gathered} \text { ET } \\ 0 \\ \text { \#DIV/0! } \end{gathered}$ | $\begin{array}{c\|} \hline \text { ER } \\ 0 \\ \text { \#DIV/0! } \end{array}$ | $\begin{gathered} \text { WL } \\ 13 \\ 44.83 \% \end{gathered}$ | $\begin{gathered} \hline \text { WT } \\ 0 \\ 0.00 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { WR } \\ 16 \\ 55.17 \% \end{array}$ | $\begin{gathered} \text { TOTAL } \\ 1281 \end{gathered}$ |
| PEAK HR START TIME : | 730 AM |  |  |  |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : PEAK HR FACTOR : |  | $\begin{gathered} 408 \\ 0.743 \end{gathered}$ | 2 |  | $\begin{aligned} & 457 \\ & 0.815 \end{aligned}$ |  |  | $\begin{gathered} 0 \\ 0.000 \end{gathered}$ |  |  | $\begin{gathered} 0 \\ 0.607 \end{gathered}$ | 13 | 893 0.794 |

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement
Prepared by:
National Data \& Surveying Services
Project ID: CA13_5332_002 Day: WEDNESDAY
City: City of Moorpark Date: 6/12/2013

| NS/ EW Streets: | PM |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Moorpark Ave |  |  | Moorpark Ave |  |  | Everett St |  |  | Everett St |  |  |  |
|  | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
| LANES: | $\begin{gathered} \mathrm{NL} \\ 0 \end{gathered}$ | $\begin{gathered} \text { NT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { NR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { SL } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{ST} \\ 1 \end{gathered}$ | $\begin{gathered} \text { SR } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{EL} \\ 0 \end{gathered}$ | $\begin{gathered} \text { ET } \\ 0 \end{gathered}$ | $\begin{gathered} \text { ER } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WL } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WT } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WR } \\ 1 \end{gathered}$ | TOTAL |
| 4:00 PM |  | 51 | 2 | 0 | 46 |  |  |  |  | 3 |  | 0 | 102 |
| 4:15 PM |  | 50 | 3 | 0 | 35 |  |  |  |  | 3 |  | 2 | 93 |
| 4:30 PM |  | 56 | 2 | 1 | 56 |  |  |  |  | 2 |  | 1 | 118 |
| 4:45 PM |  | 73 | 1 | 1 | 54 |  |  |  |  | 0 |  | 2 | 131 |
| 5:00 PM |  | 60 | 2 | 1 | 56 |  |  |  |  | 2 |  | 3 | 124 |
| 5:15 PM |  | 62 | 5 | 0 | 49 |  |  |  |  | 3 |  | 2 | 121 |
| 5:30 PM |  | 53 | 2 | 0 | 43 |  |  |  |  | 3 |  | 2 | 103 |
| 5:45 PM |  | 47 | 5 | 1 | 44 |  |  |  |  | 3 |  | 0 | 100 |
| TOTAL VOLUMES : APPROACH \% 's : | $\begin{gathered} \hline \text { NL } \\ 0 \\ 0.00 \% \end{gathered}$ | $\begin{gathered} \mathrm{NT} \\ 452 \\ 95.36 \% \end{gathered}$ | $\begin{array}{l\|} \hline \text { NR } \\ 22 \\ 4.64 \% \end{array}$ | $\begin{gathered} \hline \text { SL } \\ 4 \\ 1.03 \% \end{gathered}$ | $\begin{gathered} \text { ST } \\ 383 \\ 98.97 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { SR } \\ 0 \\ 0.00 \% \end{array}$ | $\begin{gathered} \hline \mathrm{EL} \\ 0 \\ \# \mathrm{DIV} / 0! \end{gathered}$ | $\begin{gathered} \text { ET } \\ 0 \\ \text { \#DIV/0! } \end{gathered}$ | $\begin{array}{c\|} \hline \text { ER } \\ 0 \\ \text { \#DIV/0! } \end{array}$ | $\begin{gathered} \text { WL } \\ 19 \\ 61.29 \% \end{gathered}$ | $\begin{aligned} & \hline \text { WT } \\ & 0 \\ & 0.00 \% \end{aligned}$ | $\begin{array}{c\|} \hline \text { WR } \\ 12 \\ 38.71 \% \end{array}$ | $\begin{gathered} \hline \text { TOTAL } \\ 892 \end{gathered}$ |
| PEAK HR START TIME : | 430 PM |  |  |  |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : | 0 | 251 | 10 | 3 | 215 | 0 | 0 | 0 | 0 | 7 | 0 | 8 | 494 |
| PEAK HR FACTOR : | 0.882 |  |  | 0.956 |  |  | 0.000 |  |  | 0.750 |  |  | 0.943 |

CONTROL : 1-Way Stop (WB)

# I ntersection Turning Movement Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_003 Day: WEDNESDAY
City: City of Moorpark Date: 6/12/2013


CONTROL : 2-Way Stop (EB,WB)

# I ntersection Turning Movement Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_003 Day: WEDNESDAY
City: City of Moorpark Date: 6/12/2013


CONTROL : 2-Way Stop (EB,WB)

## Moorpark Ave \& High St

## Peak Hour Turning Movement Count

ID: 19-05109-005
City: Moorpark


Total Vehicles (Noon)


Total Vehicles (PM)


| Moorpark Ave |
| :---: |
| SOUTHBOUND |



Day: Wednesday
Date: 04/17/2019


Bikes (NOON)


$$
N / A \rightarrow\langle\Delta \infty\rangle N / A
$$



Bikes (PM)


Moorpark Ave \& Poindexter Ave/1st St
Peak Hour Turning Movement Count

ID: 19-05109-008
City: Moorpark

Total Vehicles (Noon)


Total Vehicles (PM)



Bikes (NOON)

$N / A \rightarrow\langle\infty<N / A$


Bikes (PM)


# Intersection Turning Movement 

 Prepared by:National Data \& Surveying Services
Project ID: CA13_5332_006 Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013


CONTROL : 2-Way Stop (NB,SB)

# Intersection Turning Movement 

Prepared by:
National Data \& Surveying Services
Project ID: CA13_5332_006 Day: WEDNESDAY
City: City of Moorpark
Date: 6/12/2013

| NS/ EW Streets: | PM |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Walnut St |  |  | Walnut St |  |  | High St |  |  | High St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | $\begin{gathered} \text { NL } \\ 0 \end{gathered}$ | $\begin{gathered} \text { NT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { NR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { SL } \\ 0 \end{gathered}$ | $\begin{gathered} \mathrm{ST} \\ 1 \end{gathered}$ | $\begin{gathered} \text { SR } \\ 0 \end{gathered}$ | $\begin{gathered} \text { EL } \\ 0 \end{gathered}$ | $\begin{gathered} E T \\ 1 \end{gathered}$ | $\begin{gathered} \text { ER } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WL } \\ 0 \end{gathered}$ | $\begin{gathered} \text { WT } \\ 1 \end{gathered}$ | $\begin{gathered} \text { WR } \\ 0 \end{gathered}$ | TOTAL |
| 4:00 PM | 0 |  |  | 0 |  | 7 | 11 | 93 | 1 | 0 | 78 | 12 | 202 |
| 4:15 PM | 0 |  |  | 1 |  | 6 | 5 | 92 | 0 | 0 | 83 | 4 | 191 |
| 4:30 PM | 0 |  |  | 5 |  | 8 | 11 | 103 | 0 | 0 | 81 | 14 | 222 |
| 4:45 PM | 0 |  |  | 6 |  | 6 | 10 | 103 | 0 | 0 | 95 | 9 | 229 |
| 5:00 PM | 0 |  |  | 3 |  | 5 | 9 | 99 | 0 | 0 | 81 | 5 | 202 |
| 5:15 PM | 1 |  |  | 1 |  | 8 | 9 | 104 | 1 | 0 | 78 | 10 | 212 |
| 5:30 PM | 0 |  |  | 6 |  | 3 | 0 | 85 | 2 | 0 | 71 | 7 | 174 |
| 5:45 PM | 0 |  |  | 1 |  | 4 | 3 | 94 | 0 | 2 | 59 | 6 | 169 |
| TOTAL VOLUMES: APPROACH \% 's : | $\begin{gathered} \hline \mathrm{NL} \\ 1 \\ 100.00 \% \end{gathered}$ | $\begin{gathered} \hline \text { NT } \\ 0 \\ 0.00 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { NR } \\ 0 \\ 0.00 \% \end{array}$ | $\begin{gathered} \hline \text { SL } \\ 23 \\ 32.86 \% \end{gathered}$ | $\begin{gathered} \hline \text { ST } \\ 0 \\ 0.00 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { SR } \\ 47 \\ 67.14 \% \end{array}$ | $\begin{aligned} & \text { EL } \\ & 58 \\ & 6.95 \% \end{aligned}$ | $\begin{gathered} \text { ET } \\ 773 \\ 92.57 \% \end{gathered}$ | $\begin{array}{c\|} \hline \text { ER } \\ 4 \\ 0.48 \% \end{array}$ | $\begin{aligned} & \hline \text { WL } \\ & 2 \\ & 0.29 \% \end{aligned}$ | $\begin{gathered} \hline W T \\ 626 \\ 90.07 \% \end{gathered}$ | $\begin{array}{l\|} \hline \text { WR } \\ 67 \\ 9.64 \% \end{array}$ | $\begin{gathered} \hline \text { TOTAL } \\ 1601 \end{gathered}$ |
| PEAK HR START TIME : | 430 PM |  |  |  |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : | 1 | 0 | 0 | 15 | 0 | 27 | 39 | 409 | 1 | 0 | 335 | 38 | 865 |
| PEAK HR FACTOR : |  |  |  |  |  |  |  |  |  |  |  |  | 0.944 |

CONTROL: 2-Way Stop (NB,SB)

# I ntersection Turning Movement Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_007 Day: WEDNESDAY
City: City of Moorpark Date: 6/12/2013


CONTROL : Signalized

# I ntersection Turning Movement Prepared by: <br> National Data \& Surveying Services 

Project ID: CA13_5332_007 Day: WEDNESDAY
City: City of Moorpark Date: 6/12/2013

| City: City of Moorpark |  |  |  | PM |  |  |  |  |  | Date: 6/12/2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| NS/ EW Streets: | Spring Rd |  |  |  |  |  |  |  |  | Spring Rd |  |  | Charles St |  |  | Charles St |  |  |  |
| LANES: | NORTHBOUND |  |  | SOUTHBOUND |  |  | EASTBOUND |  |  | WESTBOUND |  |  |  |
|  | $\begin{gathered} \mathrm{NL} \\ 1 \end{gathered}$ | $\begin{aligned} & \text { NT } \\ & 1.5 \end{aligned}$ | $\begin{aligned} & \text { NR } \\ & 0.5 \end{aligned}$ | $\begin{gathered} \mathrm{SL} \\ 1 \end{gathered}$ | $\begin{gathered} \text { ST } \\ 2 \end{gathered}$ | $\begin{gathered} \text { SR } \\ 0 \end{gathered}$ | $\begin{aligned} & \text { EL } \\ & 0.5 \end{aligned}$ | $\begin{aligned} & \text { ET } \\ & 0.5 \end{aligned}$ | $\begin{gathered} \text { ER } \\ 0 \end{gathered}$ | $\begin{aligned} & \text { WL } \\ & 0.5 \end{aligned}$ | $\begin{aligned} & \text { WT } \\ & 0.5 \end{aligned}$ | WR | TOTAL |
| 4:00 PM | 2 | 135 | 9 | 1 | 71 | 1 | 0 | 0 | 9 | 7 | 1 | 1 | 237 |
| 4:15 PM | 8 | 153 | 12 | 0 | 64 | 0 | 0 | 0 | 7 | 3 | 1 | 0 | 248 |
| 4:30 PM | 8 | 162 | 9 | 0 | 121 | 0 | 1 | 1 | 15 | 6 | 0 | 1 | 324 |
| 4:45 PM | 11 | 183 | 9 | 2 | 90 | 1 | 2 | 1 | 10 | 4 | 1 | 0 | 314 |
| 5:00 PM | 15 | 153 | 9 | 0 | 109 | 2 | 2 | 0 | 14 | 5 | 2 | 0 | 311 |
| 5:15 PM | 14 | 169 | 16 | 1 | 101 | 0 | 2 | 0 | 8 | 9 | 2 | 0 | 322 |
| 5:30 PM | 8 | 156 | 13 | 0 | 99 | 1 | 4 | 3 | 9 | 7 | 0 | 2 | 302 |
| 5:45 PM | 11 | 181 | 16 | 0 | 78 | 0 | 1 | 0 | 7 | 8 | 0 | 1 | 303 |
| TOTAL VOLUMES : | $\begin{aligned} & \hline \mathrm{NL} \\ & 77 \end{aligned}$ | $\begin{gathered} \hline \text { NT } \\ 1292 \end{gathered}$ | $\begin{aligned} & \hline \text { NR } \\ & 93 \end{aligned}$ |  | $\begin{aligned} & \hline \text { ST } \\ & 733 \end{aligned}$ | $\begin{array}{c\|} \hline \text { SR } \\ 5 \end{array}$ | $\begin{aligned} & \mathrm{EL} \\ & 12 \end{aligned}$ | $\begin{gathered} \hline \text { ET } \\ 5 \end{gathered}$ | $\begin{aligned} & \hline \text { ER } \\ & 79 \end{aligned}$ | $\begin{gathered} \hline \text { WL } \\ 49 \end{gathered}$ | $\begin{gathered} \text { WT } \\ 7 \end{gathered}$ | $\begin{gathered} \hline \text { WR } \\ 5 \end{gathered}$ | $\begin{gathered} \hline \text { TOTAL } \\ 2361 \end{gathered}$ |
| APPROACH \% 's : |  | 88.37\% | 6.36\% | 0.54\% | 98.79\% | 0.67\% | 12.50\% | 5.21\% | 82.29\% |  |  | 8.20\% |  |
| PEAK HR START TIME : | 430 |  |  |  |  |  |  |  |  |  |  |  | TOTAL |
| PEAK HR VOL : | 48 | 667 | 43 |  | 421 | 3 | 7 | 2 | 47 | 24 | 5 | 1 | 1271 |
| PEAK HR FACTOR : |  | 0.933 |  |  | 0.882 |  |  | 0.824 |  |  | 0.682 |  | 0.981 |

CONTROL : Signalized

## Spring Rd \& High St

## Peak Hour Turning Movement Count

ID: 19-05109-006
City: Moorpark

Total Vehicles (Noon)


Total Vehicles (PM)


| Spring Rd |
| :---: |
| SOUTHBOUND |


| AM | 22 | 567 | 404 | 0 | 378 | AM |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 29 | 295 | 218 | 0 | 1132.5 | PM |

Day: Wednesday
Date: 04/03/2019


Bikes (NOON)

$N / A \rightarrow\langle$ So $\leftarrow N / A$


Bikes (PM)


## Appendix C

ICU and Levels of Service Explanation ICU Data Worksheets - Weekday AM and PM Peak Hours

## INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 Highway Capacity Manual, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing, The capacity per hour of green time for each approach is calculated based on the methods of the Highway Capacity Manual. The proportion of total signal time needed by each key movement is determined and compared to the total time available ( 100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the Highway Capacity Manual) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics

| Level of Service | Load Factor | Equivalent ICU |
| :---: | :---: | :---: |
| A | 0.0 | $0.00-0.60$ |
| B | $0.0-0.1$ | $0.61-0.70$ |
| C | $0.1-0.3$ | $0.71-0.80$ |
| D | $0.3-0.7$ | $0.81-0.90$ |
| E | $0.7-1.0$ | $0.91-1.00$ |
| F | Not Applicable | Not Applicable |

## SERVICE LEVEL A

There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

## SERVICE LEVEL B

This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

## SERVICE LEVEL C

At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

## SERVICE LEVEL D

This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

## SERVICE LEVEL E

This represents near capacity and capacity operation. At capacity (ICU = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F
Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.
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INTERSECTION CAPACITY UTILIZATION

| N-S St: <br> E-W St: <br> Project: <br> File: | Walnut Ca Casey Road 5-13-0055 ICU-1 | nyon Road ad -1 Everett S | Moorpaek reet Terra | Avenue <br> ces Project | Walnut C <br> Peak hr: <br> Annual Grow | anyon Road <br> owth: | - Moorpae <br> AM $1.0 \%$ | Avenue | Casey |  |  |  | Date: <br> Date of Co <br> Projection | unt: Year: | $\begin{array}{r} 05 / 04 / 2021 \\ 2021 \\ 2024 \end{array}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Movement | 2021 <br> 1 <br> Volume | EXIST. TR <br> 2 <br> Capacity | AFFIC <br> V/C <br> Ratio | $2021$ <br> Added <br> Volume | W/PROJE <br> Total Volume | CT SITE TR 2 Capacity | RAFFIC <br> V/C <br> Ratio | $2024$ <br> Added <br> Volume | WITHOUT <br> Total <br> Volume | PROJECT $2$ <br> Capacity | V/C <br> Ratio | $2024$ <br> Added <br> Volume | W/PROJE <br> Total <br> Volume | CT <br> Capacity <br> 2 | V/C <br> Ratio | $2024$ <br> Added <br> Volume | W/PROJE <br> Total Volume | $\begin{array}{r} \hline \text { CT + IMPR } \\ 2 \\ \text { Capacity } \end{array}$ | VEMENTS <br> V/C <br> Ratio |
| Nb Left Nb Thru Nb Right | $\begin{array}{r} 247 \\ 175 \\ 0 \end{array}$ | $\begin{array}{r} 1500 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.165 \\ & 0.109 \end{aligned}$ | $\begin{aligned} & 0 \\ & 2 \\ & 0 \end{aligned}$ | $\begin{array}{r} 247 \\ 177 \\ 0 \end{array}$ | $\begin{array}{r} 1500 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.165 \text { * } \\ & 0.111 \\ & - \end{aligned}$ | $\begin{array}{r} 102 \\ 40 \\ 0 \end{array}$ | $\begin{array}{r} 356 \\ 220 \\ 0 \end{array}$ | $\begin{array}{r} 1500 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.238 \\ & 0.138 \end{aligned}$ | 0 2 0 | $\begin{array}{r} 356 \\ 222 \\ 0 \end{array}$ | $\begin{array}{r} 1500 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.238 \text { * } \\ & 0.139 \end{aligned}$ | 0 0 0 | $\begin{array}{r} 356 \\ 222 \\ 0 \end{array}$ | $\begin{array}{r} 1500 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.238 \text { * } \\ & 0.139 \end{aligned}$ |
| Sb Left Sb Thru Sb Right | $\begin{array}{r} 0 \\ 355 \\ 75 \end{array}$ | $\begin{array}{r} 0 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.000 \\ & 0.269 \end{aligned}$ | $\begin{aligned} & 0 \\ & 1 \\ & 0 \end{aligned}$ | $\begin{array}{r} 0 \\ 356 \\ 75 \end{array}$ | $\begin{array}{r} 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.000 \\ & 0.269 \text { * } \end{aligned}$ | $\begin{array}{r} 0 \\ 92 \\ 11 \end{array}$ | $\begin{array}{r} 0 \\ 458 \\ 88 \end{array}$ | $\begin{array}{r} 0 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.000 \\ & 0.341 \end{aligned}$ | 0 1 0 | $\begin{array}{r} 0 \\ 459 \\ 88 \end{array}$ | $\begin{array}{r} 0 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.000 \\ & 0.342 \text { * } \end{aligned}$ | 0 | $\begin{array}{r} 0 \\ 459 \\ 88 \end{array}$ | $\begin{array}{r} 0 \\ 1600 \\ 0 \end{array}$ | $\begin{aligned} & 0.000 \\ & 0.342 \text { * } \end{aligned}$ |
| Eb Left Eb Thru Eb Right [3] | $\begin{array}{r} 35 \\ 0 \\ 250 \end{array}$ | $\begin{array}{r} 1500 \\ 0 \\ 1500 \end{array}$ | $\begin{aligned} & 0.023 \\ & 0.000 \\ & 0.167 \text { * } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{array}{r} 35 \\ 0 \\ 250 \end{array}$ | $\begin{array}{r} 1500 \\ 0 \\ 1500 \end{array}$ | $\begin{aligned} & 0.023 \\ & 0.000 \\ & 0.167 \text { * } \end{aligned}$ | $\begin{array}{r} 30 \\ 0 \\ 290 \end{array}$ | $\begin{array}{r} 66 \\ 0 \\ 548 \end{array}$ | $\begin{array}{r} 1500 \\ 0 \\ 1500 \end{array}$ | $\begin{aligned} & 0.044 \\ & 0.000 \\ & 0.365 \text { * } \end{aligned}$ | 0 0 0 | $\begin{array}{r} 66 \\ 0 \\ 548 \end{array}$ | $\begin{array}{r} 1500 \\ 0 \\ 1500 \end{array}$ | $\begin{aligned} & 0.044 \\ & 0.000 \\ & 0.365 \text { * } \end{aligned}$ | 0 0 0 | $\begin{array}{r} 66 \\ 0 \\ 548 \end{array}$ | $\begin{array}{r} 1500 \\ 0 \\ 1500 \end{array}$ | $\begin{aligned} & 0.044 \\ & 0.000 \\ & 0.127 \text { * } \end{aligned}$ |
| Wb Left Wb Thru Wb Right | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0.000 \\ & 0.000 \\ & - \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | 0 0 0 | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0.000 \text { * } \\ & 0.000 \\ & - \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | 0 0 0 | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0.000 \text { * } \\ & 0.000 \\ & - \end{aligned}$ | 0 0 0 | 0 0 0 | 0 0 0 | $\begin{aligned} & 0.000 \text { * } \\ & 0.000 \end{aligned}$ | 0 0 0 | 0 0 0 | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0.000 \text { * } \\ & 0.000 \end{aligned}$ |
| Yellow Allow | ance: |  | 0.100 * |  |  |  | 0.100 * |  |  |  | 0.100 * |  |  |  | 0.100 * |  |  |  | 0.100 * |
| ICU |  |  | $\begin{aligned} & 0.700 \\ & B \end{aligned}$ |  |  |  | $C^{0.701}$ |  |  |  | $F^{1.044}$ |  |  |  | 1.044 |  |  |  | 0.807 |
| * Key conflicting movement as a part of ICU <br> 1 Counts conducted by NDS <br> 2 Capacity expressed in veh/hour of green <br> 3 The improvement measure includes the traffic signal modification to provide an eastbound right-turn overlap phase to coincide with the northbound left-turn phase. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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## INTERSECTION CAPACITY UTILIZATION



* Key conflicting movement as a part of ICU

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N－S St：Moorpark Avenue
Project：$\quad$ 5－13－0055－1 Everett Street Terraces Project Project．
File：ICU－2

|  |  |  | 88 <br> $\circ \circ$ <br> 000 <br> 000 <br> 000 | $\begin{aligned} & 60 \mathrm{~N} \\ & 000 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\frac{8}{0}$ | $\stackrel{\infty}{\stackrel{\infty}{0}}$ <br> 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8 운 <br> $\circ 0^{\circ}$ <br> $08^{\circ}$ <br> $05^{N}$ <br> －ฐ゚ロ | O \＆！ <br> $\circ 0^{\circ}$ <br> $8^{\circ} 8^{\circ}$ <br> $\stackrel{\circ}{-}$ <br> FO <br> $\bigcirc \underset{\sim}{\infty} 0$ | 000 <br> 000 <br> 000 | 웅응 000 $\stackrel{8}{\circ}$ <br> $+\circ$ に <br> 000 | $\begin{aligned} & * \\ & \stackrel{*}{0} \\ & \stackrel{3}{\circ} \end{aligned}$ | $\stackrel{N_{0}^{N}}{\stackrel{1}{0}}$ |
|  |  <br> 00 ロ | -00 | $\begin{aligned} & 80 \\ & 80 \\ & 00 \\ & 00 \end{aligned}$ <br> 000 <br> 000 | $\begin{aligned} & 6 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { * } \\ & \stackrel{\circ}{0} \\ & \stackrel{1}{0} \end{aligned}$ | $\stackrel{\sim}{0}_{0}^{0}$ |
|  |  |  <br> ん ん 毋 | 88 0. 0. <br> 000 <br> 000 <br>  <br> 느를 | 0.8 $00^{\circ}$ $\mathrm{O}_{\circ}^{\circ} \circ$ <br> $\forall \circ$ 요 <br>  <br> 号号号 |  | つ O9 |

＊Key conflicting movement as a part of ICU
1 Counts conducted by．NDS
2 Capacity expressed in veh／hour of green
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N－S St：Moorpark Avenue
Project：$\quad 5-13-0055-1$ Everett Street Terraces Project $\begin{array}{ll}\text { File：} & \text { ICU－2 }\end{array}$

|  | 8  <br> 0  <br> 0 0 <br> 0  <br> $08^{\circ}$ <br> － $\ln _{\mathrm{N}} \bar{m}$ <br> ○○の |  | 0. <br> 000 <br> 000 <br> 000 | $\begin{aligned} & \text { m O O } \\ & \vdots \\ & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | ＊ | $\circ$ <br> $\stackrel{0}{0}$ <br> 0 <br> ๓ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 웅 <br> 00 <br> $08^{\circ}$ <br> $\bigcirc \underset{\sim}{\circ} \stackrel{N}{\sim}$ <br> $\bigcirc \frac{m}{\square}$ | Nิ N్ల <br> 0 <br> $\circ 8^{\circ}$ $\mathrm{C}^{\circ} 0^{\circ}$ <br> ल せ 心 <br> $0 \hat{N}^{\circ}$ | 88 <br> 0. <br> 000 <br> 000 <br> 000 | $\stackrel{\circ}{\circ} 8$ $\circ \circ$ $\stackrel{\circ}{\circ} \mathrm{O}$ $\sim$ <br> $\wedge ○ \infty$ <br> 000 | $\frac{8}{0}$ | $\begin{aligned} & \stackrel{\circ}{0} \\ & 0_{0}^{0} \\ & \ll \end{aligned}$ |
|  | O <br> $08^{\circ}$ $0^{\circ}$ <br> －ハ్లூ <br> －○ の | $\stackrel{0}{\circ} \underset{\circ}{\infty}$ <br> $88^{\circ}$ <br> $\stackrel{\text { 운 }}{\sim}$ <br> ம $\propto$ <br> N <br> NOO | 88 <br> 0 <br> 000 <br> 000 <br> 000 |  | $\frac{8}{1}$ | $\stackrel{L}{0}_{\substack{0 \\ 0 \\ \hline \\ \hline}}$ |
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＊Key conflicting movement as a part of ICU
1 Counts conducted by．NDS
2 Capacity expressed in veh／hour of green

| Date： | $05 / 04 / 2021$ |
| :--- | ---: |
| Date of Count： | 2021 |
| Projection Year： | 2024 |

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|  |  | Moorpark Avenue @ Charles Street |  |
| :--- | :--- | :--- | :--- |
| N-S St: | Moorpark Avenue | Peak hr: | AM |
| E-W St: | Charles Street | Annual Growth: | $1.0 \%$ |
| Project: | $5-13-0055-1$ Everett Street Terraces Project |  | Date: |
| File: | ICU-3 |  | Date of Count: |
| Projection Year: |  |  |  |



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\begin{aligned}
& \text { Moorpark Avenue @ Charles Street } \\
& \text { Peak hr: } \\
& \text { Annual Growth: } \quad 1.0 \%
\end{aligned}
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* Key conflicting movement as a part of ICU
1 Counts conducted by. NDS
2 Capacity expressed in veh/hour of green
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* Key conflicting movement as a part of ICU
1 Counts conducted by NDS
4 The improvement measure includes the traffic signal modification to provide a westbound right-turn overlap phase to coincide with the southbound left-turn phase.
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INTERSECTION CAPACITY UTILIZATION
$\begin{array}{lr}\text { Walnut Street @ } & \text { High Street } \\ \text { Peak hr: } & \text { AM } \\ \text { Annual Growth: } & 1.0 \%\end{array}$
$\begin{array}{ll}\text { Project: } & \text { ICU-0055-1 Everett Street Terraces } \\ \text { File: }\end{array}$


* Key conflicting movement as a part of ICU
1 Counts conducted by NDS
2 Capacity expressed in veh/hour of green
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（818）835－8648 Fax（818）835－8649 INTERSECTION CAPACITY UTILIZATION
$\begin{array}{lr}\text { Walnut Street＠} & \text { High Street } \\ \text { Peak hr：} & \text { PM } \\ \text { Annual Growth：} & 1.0 \%\end{array}$
Project．$\quad$ ICU－6
File：
N－S St：Walnut Street
$\begin{array}{ll}\text { N－S St：} & \text { High Street } \\ \text { E－W St：} & \text { Project：} \\ & 5-13-0055-1\end{array}$

|  | 8.8 <br> 000 <br> 000 <br> 000 | 둥 <br> $\bigcirc 0_{0}^{\circ}$ <br> $\stackrel{\infty}{\stackrel{\circ}{\circ}}$ <br> 000 | $\stackrel{\infty}{0} \underset{\sim}{\circ}$ <br> $00_{0}^{\circ}$ <br> －${ }^{\circ}$ <br> ○ ○ | $8 \square_{0}^{\infty}$ <br> $00^{\circ}$ <br> －육 <br> 0 ㄷo | $\stackrel{*}{\circ}$ | $\underset{\substack{\text { O} \\ \hline}}{\text { O}}$ <br> $\infty$ |
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|  | 88 <br> － <br> 000 <br> 000 <br> 000 |  |  |  | $\stackrel{*}{\circ}$ | $\stackrel{ \pm}{6}_{\circ_{\infty}}$ |
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|  | $8 \%$ <br> 000 <br> 000 <br>  <br> z |  | 눌 를 듣 <br> 프플 |  |  |  $\underline{0}$ |

＊Key conflicting movement as a part of ICU
1 Counts conducted by NDS
2 號
2 Capacity expressed in veh／hour of green
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20931 Burbank Boulevard，Suite C，Woodland Hills，CA
（818）835－8648 Fax（818）835－8649
Spring Road @ Charles Street

$\begin{array}{ll}\text { N－S St：} & \text { Spring Road } \\ \text { E－W St：} & \text { Charles Street } \\ \text { Project：} & 5-13-0055-1 \text { Everett Street Terraces Project } \\ \text { File：} & \text { ICU－7 }\end{array}$

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\begin{array}{lr}
\text { Date: } & 05 / 05 / 2021 \\
\text { Date of Count: } & 2021 \\
\text { Projection Year: } & 2024
\end{array}
$$

|  |  |  | $+\odot \circ$ <br> 000 | $\left.\begin{array}{lll} \hline * & & \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 \end{array}\right]$ | $\stackrel{*}{\circ}$ | N $\substack{0 \\ 0 \\ \text { R }}$ ＜ |
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|  | $\stackrel{m}{\circ} \underset{0}{\underset{O}{c}}$ <br> $88^{\circ}$ <br> $\stackrel{\sim}{\sim}$ <br> $\stackrel{\sim}{N} \underset{\sim}{\infty} \stackrel{\sim}{\sim}$ <br> 흘 륻 듬 <br> 之吕 을 |  |  <br> 0 <br> $00^{\circ}$ $0^{\circ}$ <br> $+\circ$ กิ <br>  <br> 프플 |  | $\stackrel{8}{\circ}$ <br>  | ${ }^{0}{ }_{0}^{0}$ つ Oí |

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N-S St: Spring Road
$\begin{array}{ll}\text { N-S St: } & \text { Charles Street } \\ \text { E-W St: } & \\ \text { Project: } & 5-13-0055-1 \text { Ev }\end{array}$
File: ICU-7

|  |  |  |  | $\circ 88$ 6 6 <br> $\hat{N}^{n}-$ <br> 000 | $\stackrel{\circ}{\div}$ | 1 0 0 0 0 0 |
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|  |  <br>  <br> 000 | 000 | 웅 <br> 0 <br> $08^{\circ}$ <br> ヘ~ $ก$ <br> 000 |  | $\stackrel{*}{\circ}$ | $\stackrel{\Gamma}{5}_{\substack{0 \\ \hline}}$ |
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[^20]$\begin{array}{lr}\text { Date: } & 05 / 05 / 2021 \\ \text { Date of Count: } & 2021 \\ \text { Projection Year: } & 2024\end{array}$
LINSCOTT, LAW \& GREENSPAN, ENGINEERS
20931 Burbank Boulevard, Suite C, Woodland Hills, CA (818) 835-8648 Fax (818) 835-8649 Spring Road @ High Street - Princeton Avenue
INTERSECTION CAPACITY UTLIZATION


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## INTERSECTION CAPACITY UTILIZATION

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\begin{aligned}
& \text { Spring Road @ High Street - Princeton Avenue } \\
& \text { Peak hr: } \\
& \text { Annual Growth: } \\
& \text { PM } \\
& \text { An }
\end{aligned}
$$

Project: $\quad 5-13-0055-1$ Everett Street Terraces Project
File: ICU-8

| Movement Volume ${ }^{2021}$ |  | EXIST. TRAFFIC |  | 2021 W/PROJECT SITE TRAFFIC |  |  |  | 2024 WITHOUT PROJECT |  |  |  | 2024 W/PROJECT |  |  |  | 2024 W/PROJECT + IMPROVEMENTS |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $2$ <br> Capacity | V/C <br> Ratio | Added <br> Volume | Total <br> Volume | $2$ <br> Capacity | V/C <br> Ratio | Added <br> Volume | Total <br> Volume | $\begin{array}{r} 2 \\ \text { Capacity } \\ \hline \end{array}$ | V/C <br> Ratio | Added <br> Volume | Total <br> Volume | $2$ <br> Capacity | V/C <br> Ratio | Added <br> Volume | Total <br> Volume | $\begin{array}{r} 2 \\ \text { Capacity } \end{array}$ | V/C <br> Ratio |
| Nb Left | 171 | 1500 | 0.114 | 6 | 177 | 1500 | 0.118 | 169 | 345 | 1500 | 0.230 | 6 | 351 | 1500 | 0.234 | 0 | 351 | 1500 | 0.234 |
| Nb Thru | 637 | 3200 | 0.199 * | 0 | 637 | 3200 | 0.199 * | 23 | 679 | 3200 | 0.212 | 0 | 679 | 3200 | 0.212 | 0 | 679 | 3200 | 0.212 |
| Nb Right | 268 | 1500 | 0.179 | 0 | 268 | 1500 | 0.179 | 52 | 328 | 1500 | 0.219 * | 0 | 328 | 1500 | 0.219 * | 0 | 328 | 1500 | 0.219 * |
| Sb Left | 222 | 1500 | 0.148 * | 0 | 222 | 1500 | 0.148 * | 4 | 233 | 1500 | 0.155 * | 0 | 233 | 1500 | 0.155 * | 0 | 233 | 1500 | 0.155 * |
| Sb Thru | 301 | 3200 | 0.103 | 0 | 301 | 3200 | 0.103 | 6 | 316 | 3200 | 0.109 | 0 | 316 | 3200 | 0.109 | 0 | 316 | 3200 | 0.109 |
| Sb Right | 30 | 0 | - | 0 | 30 | 0 | - | 3 | 34 | 0 | - | 0 | 34 | 0 | - | 0 | 34 | 0 | - |
| Eb Left | 36 | 1500 | 0.024 * | 0 | 36 | 1500 | 0.024 * | 2 | 39 | 1500 | 0.026 | 0 | 39 | 1500 | 0.026 | 0 | 39 | 1500 | 0.026 * |
| Eb Thru | 328 | 1600 | 0.205 | 3 | 331 | 1600 | 0.207 | 145 | 483 | 1600 | 0.302 * | 3 | 486 | 1600 | 0.304 * | 0 | 486 | 3200 | 0.234 |
| Eb Right | 142 | 1500 | 0.095 | 4 | 146 | 1500 | 0.097 | 113 | 259 | 1500 | 0.173 | 4 | 263 | 1500 | 0.176 | 0 | 263 | 0 | - |
| Wb Left | 104 | 1500 | 0.069 | 0 | 104 | 1500 | 0.069 | 59 | 166 | 1500 | 0.111 * | 0 | 166 | 1500 | 0.111 * | 0 | 166 | 1500 | 0.111 |
| Wb Thru | 278 | 1600 | 0.174 | 4 | 282 | 1600 | 0.176 | 181 | 467 | 1600 | 0.292 | 4 | 471 | 1600 | 0.295 | 0 | 471 | 1600 | 0.295 |
| Wb Right | 484 | 1500 | 0.323 * | 0 | 484 | 1500 | 0.323 * | 1 | 500 | 1500 | 0.333 | 0 | 500 | 1500 | 0.333 | 0 | 500 | 1500 | 0.333 * |
| Yellow Allowance: |  | 0.100 * |  |  | 0.100 * |  |  |  | 0.100 * |  |  |  | 0.100 * |  |  | 0.100 * |  |  |  |
| ICU |  | 0.794 |  |  | 0.794 |  |  |  | 0.886 |  |  |  | 0.888 |  |  | 0.833 |  |  |  |
| LOS |  | C |  |  | C |  |  |  | D |  |  |  | D |  |  | D |  |  |  |

* Key conflicting movement as a part of ICU
2 Capacity expressed in veh/hour of green


[^0]:    ${ }^{1}$ Aldersgate Senior Living Project Traffic and Circulation Study, Associated Transportation Engineers, March 2014.

[^1]:    CONTROL : Signalized

[^2]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS

[^3]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS

[^4]:    Key conficting movement as a part of ICU
    1 Counts conducted by NDS

[^5]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green

[^6]:    Key conficting movement as a part of ICU
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green
    3 Eastbound and Westbound operate with split phasing.

[^7]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green

[^8]:    Ky conficting movement as a part of ICU
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green

[^9]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS

[^10]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS

[^11]:    Key contlicting movement as a part of ICU
    1 Counts conducted by NDS

[^12]:    Key conficting movement as a part of ICL
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green

[^13]:    Key conflicting movement as a part of ICU
    1 Counts conducted by NDS
    2 Capacity expressed in veh/hour of green

[^14]:    ${ }^{1}$ Moorpark City Transit Evaluation - Final Report, Nelson\Nygaard Consulting Associates, Inc., May 2017.

[^15]:    [1] Sources: Moorpark City Transit website, 2021.
    Ventura County Transportation Commission (VCTC) website, 2021.

[^16]:    ${ }^{2}$ Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, December 2018.

[^17]:    ${ }^{3}$ Traffic Impact Analysis for the Proposed Hitch Ranch Specific Plan, Impact Sciences, August 2020.
    ${ }^{4}$ Traffic Impact Study for the Everett Street Terraces Project, Linscott, Law \& Greenspan, Engineers, February 2016.

[^18]:    * Key conflicting movement as a part of ICU

    2 Capacity expressed in veh/hour of green

[^19]:    ＊Key conflicting movement as a part of ICU
    2 Capacity expressed in veh／hour of green

[^20]:    * Key conflicting movement as a part of ICU

    1 Counts conducted by NDS

[^21]:    * Key conflicting movement as a part of ICU

    1 Counts conducted by NDS

