Hexagon Transportation Consultants, Inc.

Middlefield Park Master Plan

Vehicle Miles Traveled and Multi-Modal Transportation Analysis

Prepared for:

David J. Powers & Associates, Inc.

April 13, 2022

Hexagon Transportation Consultants, Inc.
Hexagon Office: 100 Century Center Court, Suite 501
San Jose, CA 95112
Phone: 408.971.6100
Hexagon Job Number: 21KK12
Client Name: Carolyn Neer, David J. Powers & Associates, Inc.

Table of Contents

Appendices

List of Tables

List of Figures

Executive Summary

This report presents the results of the vehicle miles traveled (VMT) analysis and multimodal transportation analysis (MTA) conducted for the proposed Middlefield Park Master Plan (MPMP) in Mountain View, California. The plan area is located within the Mixed-Use Character Area and Employment Area North Character Area of the East Whisman Precise Plan (EWPP) with frontages on Middlefield Road, Ellis Street, Logue Avenue, Maude Avenue, and Clyde Avenue. The southern portion of the plan area is immediately west and adjacent to the Middlefield Light Rail Transit (LRT) Station operated by the Santa Clara Valley Transportation Authority (VTA). The project abuts the city limit with the City of Sunnyvale.

The MPMP proposes to demolish 23 existing buildings (totaling approximately 685,000 square feet), surface parking lots, and landscaping, to redevelop an approximately 40-acre plan area with 1,317,000 square feet (s.f.) of office space (632,000 s.f. net new) within five office buildings, up to 1,900 dwelling units within seven residential buildings, up to 41,000 square feet of ground floor retail space in the residential buildings, 9,000 square feet of ground floor community/civic uses, and two office parking structures[1]. Additionally, the project would dedicate land for new public parks and open space. The project would be developed in four phases. Site access to the proposed buildings in the MPMP would be provided via Ellis Street, Logue Avenue, Clyde Avenue, and Maude Avenue. As part of the development, Logue Avenue would be extended northward from the existing cul-de-sac to the boundary of the property of the City and County of San Francisco (referred to as the SFPUC or Hetch-Hetchy right of way) with a new cul-de-sac that would provide access to the new service streets along the northern MPMP area boundary.

Because the project is located within the EWPP area, for which an Environmental Impact Report (EIR) was completed in 2019, and is consistent with the EWPP, this MTA focuses on evaluating the project's transportation effects under near-term conditions. The project's cumulative transportation impacts were evaluated in the EWPP EIR.

The purpose of this report is to satisfy the requirements of the City of Mountain View, the Congestion Management Program (CMP) of the VTA, and the California Environmental Quality Act (CEQA). Per California Senate Bill 743 (SB743) and CEQA Guidelines, the study includes a VMT analysis. The MTA also evaluates potential transportation effects of the project in accordance with the standards and methodologies set forth by the City of Mountain View and the VTA. The VTA administers the CMP.

[1] The Master Plan proposes 30,000 s.f. of retail and 20,000 s.f. of community/civic uses. However, some land uses proposed under the community/civic uses would result in traffic patterns more similar to retail uses. Therefore, this analysis conservatively assumes 41,000 s.f. of retail and 9,000 s.f. community/civic uses.

VMT Analysis

The Mountain View VMT Policy establishes screening criteria for developments that are expected to cause a less-than-significant transportation impact under CEQA, which confirm no further VMT analysis is required. The proximity to transit screening criterion was developed based on the CEQA Guidelines Section 15064.3, subdivision (b)(1), which states lead agencies generally should presume that certain projects proposed within a half 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.

The project is located in a transit proximity area because it is located within a half mile of the Middlefield LRT Station, which is considered a major transit stop, and complies with the Mountain View VMT Policy. Additionally, the project is consistent with the EWPP EIR VMT analysis. Therefore, the project has a less-than-significant impact on VMT.

Project Trip Estimates

Trip generation estimates for the proposed project were based on trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition and the trip caps for new office developments in the EWPP area.[2] Internal and transit trip reductions were applied to the project according to the VTA *Transportation Impact Analysis (TIA) Guidelines*. After applying the applicable trip reductions and existing trip credits, the net new project trips would be 10,812 daily trips, including 998 AM peak hour trips (487 inbound trips and 511 outbound trips), and 1,061 PM peak hour trips (539 inbound trips and 522 outbound trips). The AM peak hour of traffic is between 7:00 and 10:00 AM, and the PM peak hour is between 4:00 and 7:00 PM.

Intersection Traffic Operations

The results of the intersection level of service analysis show the Grant Road/SR 237 and El Camino Real intersection would operate at LOS F under existing and background conditions. However, the added project traffic would not result in an adverse effect at the intersection. All other signalized study intersections would operate at an acceptable level of service.

At the unsignalized intersections, the results show the Ellis Street and Manila Drive intersection would operate at LOS F during the AM peak hour under background conditions with and without the project. The peak-hour volume signal warrant analysis indicates the intersection would meet the thresholds that warrant signalization under both existing and background conditions during both AM and PM peak hours. To address the deficiency, the EWPP EIR recommends signalizing the intersection with a protected left turn lane and shared through/right lane for each approach. Thus, the project should contribute to the improvement identified by the EWPP EIR. This contribution may be met with payment of the East Whisman Development Impact Fee currently being under review by the City (EWPP Nexus Study) and anticipated to be considered for adoption by City Council in mid-2022.

Turn Pocket Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis for intersections where the project would add a substantial number of trips to the left-turn movements. The queuing analysis indicates, the project would increase the 95th percentile queue for the southbound left-turn movement by three vehicles under background plus project conditions, causing the 95th percentile

[2] For a consistent comparison with the EWPP EIR, the ITE 10th Edition Manual was used.

vehicle queue to exceed the storage capacity by six vehicles in the AM peak hour at the Ellis Street and Fairchild Drive intersection. The EWPP EIR analyzed the Ellis Street corridor at the US 101 interchange. The EIR identified during the AM peak hour, the southbound queue at Fairchild Drive would extend to the US 101 southbound ramp intersection and cause extensive queuing and vehicle delays on the southbound off ramp. However, the EIR indicates that due to right-of-way and funding constraints, there are no feasible improvements to improve operations and vehicle queuing along Ellis Street at the interchange.

At the Ellis Street and Middlefield Road intersection, the queuing analysis indicates the project would increase the 95th percentile queue for the eastbound left-turn movement by one vehicle under background plus project conditions, causing the 95th percentile vehicle queue to exceed the storage capacity by five vehicles in the AM peak hour and one vehicle in the PM peak hour. The EWPP EIR identifies the need for an improvement at this intersection, specifically along the eastbound direction to improve queuing. The EWPP EIR recommends adding an eastbound left-turn lane with overlap signal phasing. Thus, the project should contribute to this improvement, which could be met by payment of the EWPP Development Impact fee should it be adopted.

Freeway Ramp Operations

A freeway ramp operations analysis was performed to identify the effects of project traffic on the vehicle queues at the metered on-ramps and the signal-controlled off-ramps during the AM and PM peak hours of traffic. At the US 101/Ellis Street interchange, the EWPP EIR identified that during the AM peak hour, due to the southbound queue at Fairchild Drive and the northbound queue at the US 101 Northbound Ramp extending to the US 101 Southbound Ramp intersection, the northbound and southbound off ramp queues are expected to frequently extend to the end of the ramps under background conditions, which could negatively affect freeway operations. During the PM peak hour, the US 101 southbound on-ramp is expected to be fully occupied and spill back onto Ellis Street, blocking the Fairchild Drive intersection. The US 101 northbound off-ramp queue is expected to extend to the end of the ramp due to the limited operational capacity of the westbound left-turn at the end of the ramp. The project trips would contribute to the ramp operation/queueing issues identified in the EWPP EIR. However, due to right-of-way and funding constraints, the EWPP EIR indicates that there are no feasible improvements to improve operations and queuing issues at the interchange.

Although the interchange cannot be physically improved, the project would improve pedestrian and bicycle access and connection by providing multi-use paths in the project area and improving bike lanes adjacent to and within the Master Plan. It would also expand the Google employee shuttle system (GBus) to the project area to reduce employee vehicle trips. These project features are expected to increase alternative modes of travel and reduce vehicle trips on the surrounding street system.

Traffic Control at Midblock Pedestrian Crossings

The project proposes midblock pedestrian crossings on Ellis Street north of Building O1, on Middlefield Road adjacent to the LRT tracks, on Logue Avenue north of Building R3, on Clyde Avenue south of Buildings O4 and O5/P1, and on Clyde Avenue north of Building R5. Midblock crosswalks are proposed to maximize east-west pedestrian/bicycle connection from Ellis Street, north of Building O1, to Logue Avenue and the proposed open space (Maude Park) to Clyde Avenue.

Based on the estimated peak-hour traffic volumes under background plus project conditions and the pedestrian volumes estimated by the pedestrian flow model, the recommended traffic control treatments for the pedestrian midblock crossings are summarized below:

- **Ellis Street Crossing north of Building O1**: Provide a traffic signal on Ellis Street at the Quad Campus driveway (365 N Whisman Road/464 Ellis Street) and relocate the proposed crossing to the south leg of the intersection. Eliminate the existing Ellis Street crossing north of the Quad Campus driveway. This would result in the proposed crossing being located further north than currently proposed in the Master Plan.

- **Middlefield Road Crossing at the LRT tracks**: Provide a signal for the crossing generally parallel to the LRT tracks. Interconnect and coordinate the pedestrian signal with the signal at Logue Avenue and Middlefield Road. Provide signal preemption for Logue/Middlefield signals to further improve pedestrian crossing and rail operations.

- **Logue Avenue Crossing north of Building R3**: Install an active crosswalk with RRFB and install infrastructure (e.g., conduits, lighting, etc.) to facilitate the installation of a future signal for a future pedestrian-bicycle bridge to be designed and constructed by others.

- **Clyde Avenue Crossing south of Buildings O4 and O5/P1**: Install a signalized crosswalk at least 100 feet from the driveway to Building O5/P1.

- **Clyde Avenue Crossing north of Building R5**: Install an active crosswalk with RRFB at the P2 driveway, at least 300 feet from the Clyde Avenue crossing south of Building O5/P1.

Private Service Street Entrance/Driveway Operations

The service streets and driveways to the project buildings/garages are not expected to cause any on-site or on-street queuing issues, as the service street entrances/driveways are expected to provide a minimum queue storage of two vehicles for both inbound and outbound movements. It is unknown whether the driveway to Building O5/P1 would be located on the north or south side of the building. However, it is recommended the O5/P1 service street be on the north side of Building O5/P1 to align with the service street north of Buildings O3 and O4, creating an intersection.

The service street on Ellis Street to Buildings O1/R2 would meet the signal warrant as it provides access to garages serving Building O1 and Buildings R1/R2. None of the other driveways/private service street entrances would meet signal warrants under background plus project conditions during either of the peak hours.

To minimize the project’s traffic effect on Maude Avenue and delay for vehicles accessing Building R6, the following design and control measures can be considered based on driveway location:

- If the driveway is located west of the intersection, then the driveway should be restricted to right-in and right-out only;

- If the driveway is located east of the intersection, between Building R6 and Gateway Park, then vehicles could make a left turn into the driveway without affecting traffic on Maude Avenue; or

- The driveway could be aligned with the Clyde Avenue/Maude Avenue intersection and the intersection would still operate at an acceptable level with an all-way stop.

Flex/Loading Zone Locations

The project proposes on-street flex zones and on-site loading zones in various locations for passenger pick-up/drop-off and delivery loading. The following flex/loading zones proposed by the project could be retained: (a) on-street flex zone at Building O2 on Logue Avenue, (b) on-site loading zones within the parking garages or service streets/driveways at Buildings R1/R2, R6, and O1.

The flex zone for the O2 building would be located in the on-street parking lane near the cul de sac. It is assumed the cul de sac would be large enough to accommodate truck maneuver within the cul de sac without interfering with the parking lane on Logue Avenue. It is recommended the flex zone be located directly adjacent to the cul de sac, so vehicles could access the flex zone easily.

It is recommended to relocate the proposed on-street flex zones at R3, R4/R4 affordable (R4 aff), R5, and O3, O4, and O5 to be on each respective site as on-site loading spaces or zones and provided adequate turnaround space within the service streets for vehicles to exit onto the adjacent roadways.

Parking

A parking study was conducted to evaluate appropriate parking ratios for the project, due to the Precise Plan's parking maximums and the applicant's request to evaluate a parking reduction for retail parking, unbundled residential parking, and reduced loading spaces. The study also included a shared parking analysis between residential and retail/community space parking within each mixed-use building and between district office parking and park users. The study results provide recommended parking ratios based on land use and parking conditions (shared and/or unbundled).

Office Use Parking. The project should provide 2.0 spaces per 1,000 s.f. for office use, based on the surveyed utilization rates of similar office developments plus the availability of the GBus employee shuttle program. This parking rate is within the maximum parking of 2.9 spaces per 1,000 s.f allowed in the EWPP. Per the draft Master Plan, the project provides an adequate number of total parking spaces for office use within a district parking arrangement.

Retail/Community/Civic Use Parking. Based on the *ITE Parking Generation Manual*, the project should provide 3.68 spaces per 1,000 s.f. for retail/community/civic uses, which is a reduction from the required minimum of 4 spaces per 1,000 s.f per the EWPP. In some parking scenarios discussed below, the draft Master Plan may not be providing enough parking per mixed-use building to accommodate the ground-floor commercial uses and residential parking. For the P2 structure, 15 additional parking spaces would be required for the retail/community space, and for the Ellis Park Fairchild Barns, an additional 4 spaces would be required in the R1/R2 garage.

Affordable Multi-Family Residential Use Parking. Based on the State Density Bonus Law (Assembly Bill 1763), the project is assumed to provide 0.5 spaces per affordable residential unit. Parking proposed in Building R4 affordable (R4 aff) would be 63 spaces more and for Building R6 would be 51 spaces more than what would be required by State Density Bonus Law.

Market-Rate Multi-Family Residential Use Parking. Multi-family residential parking for the market-rate units was evaluated in three scenarios, based on whether residential parking is unbundled and if retail/community use parking was shared with the residential parking in the same building. Each scenario identifies an appropriate parking rate and notes any parking count differences per building location based on the draft Master Plan.

Scenario 1: No Shared, No Unbundled Parking

The project should provide one space per unit (equivalent to 0.72 spaces per bedroom) for market rate units, based on the local surveyed utilization rates and adjacency to transit, retail services, and open spaces. This parking rate is within the maximum parking allowed of 1 space per studio/1 bedroom unit and 2 spaces per 2 or more-bedroom units in the EWPP.

Based on Scenario 1, assuming no shared parking with the retail/community/civic uses, the project would need to provide 1,689 parking spaces for the market-rate residential buildings, which is 351 spaces more than included in the draft Master Plan.

Scenario 2: No Shared, With Unbundled Parking

The project should provide 0.85 spaces per unit (equivalent to 0.61 spaces per bedroom) for market rate, based on the parking demand reduction found in the GreenTRIP Parking Database and CAPCOA *Handbook for Analyzing Greenhouse Gas Emission Reductions* for unbundled parking. This parking rate is within the maximum parking allowed of 1 space per studio/1 bedroom unit and 2 spaces per 2 or more bedroom units in the EWPP.

Based on Scenario 2, with fully unbundled residential parking provided separate from retail/community use parking, the project would need to provide 1,463 parking spaces for the market-rate residential buildings, which is 125 spaces more than included in the draft Master Plan.

Scenario 3: Shared and Unbundled Parking

The parking rate applied to the market rate units is the same as Scenario 2. Assuming that the retail parking could be used by residents at night, the project would need to provide 1,294 parking spaces for the market-rate residential buildings, which is 44 spaces fewer than included the draft Master Plan.

Park Use Parking. The project would not be required to provide separate parking for the public parks/open space. However, a shared parking analysis was conducted for the P1 and P2 garages to evaluate the number of parking spaces that could be shared between the office and park users outside of the office peak hours. The shared analysis shows the office parking demand would peak from 10:00 to 11:00 AM on weekdays when there would be no available parking spaces to share. During the rest of the weekday and weekend, when the office parking demand is lower, it is expected the available parking spaces in the parking garages would be sufficient to accommodate the parking demand for office and park users.

Loading Spaces. Based on a study prepared by ARUP, the project would provide 18 loading spaces for office use and 15 loading spaces for the ground-floor commercial uses, in lieu of providing the zoning required 67 loading spaces for office use and 2 spaces for the ground-floor commercial uses.

Pedestrian and Bicycle Operations

Ellis Street, Maude, Logue, and Clyde Avenues, and Fairchild Drive in the project area have a pedestrian quality of service (PQOS) score greater than 2, which indicates a low quality of service. The project would have an adverse effect on the PQOS because it would add new vehicle trips to these street segments. However, the project is a mixed-use development that provides a variety of land uses within close proximity and includes new pedestrian, bicycle, and multi-use paths with direct pedestrians and bicycle routes to transit/shuttle stops, jobs/housing/retail services, open space, existing trail networks, and street segments. The project also would provide enhanced midblock pedestrian crossings to ensure a continuous network of pedestrian facilities across streets and new on-street bike lane improvements. The project would also provide wider sidewalks with landscaping for streets along the project frontages to enhance the pedestrian environment. Taking these factors into account, the project is expected to improve the PQOS along Ellis Street, Clyde Avenue, Maude Avenue, and Logue Avenue within the plan area.

Ellis Street and Middlefield Road in the project area have a bicycle level of traffic stress (BLTS) score greater than 2, which indicates that the bikeway is only comfortable for a more confident adult. The project would have an adverse effect on the BLTS because it would add new vehicle trips to these street segments. However, the project would improve the bike lanes along the project frontage on Ellis Street, Logue Avenue, Clyde Avenue, and Maude Avenue to a Class II buffered on-street bike lane, and upgrade Middlefield Road to Class IV protected bike lanes along the project frontage. Implementing the protected bike lanes on Middlefield Road and buffered bike lanes on Ellis Street is expected to lower the BLTS score, as protected/buffered bike lanes would provide more space between vehicular traffic and bicyclists.

Removal of Street C from the EWPP

The EWPP proposes a Street C that extends midblock between Logue Avenue and Clyde Avenue from Maude Avenue northward toward the Hetch Hetchy right of way and ends in a cul-de-sac. Because Street C would end in a cul-de-sac, it would not serve through traffic and would only serve properties along the new street. The project would provide direct access to the proposed buildings in the area bounded by Logue, Maude, and Clyde Avenues via new service streets on Maude Avenue (for buildings R3, R4/R4 aff, and R5), Clyde Avenue (buildings O5/P1), the new service street running along the northern boundary (buildings O2, O3, and O4). Therefore, Street C is not necessary for vehicular access to these buildings. Although Street C would provide pedestrian/bicycle midblock public access between Logue Avenue and Clyde Avenue, the project would also provide multiple north-south, multi-use paths/paseos for the public from Maude Avenue and the service street along the northern project boundary to the future City park. Thus, Street C is not necessary for vehicular or pedestrian circulation. Replacing Street C with multi-use paths/paseos would be consistent with the EWPP. As the City goes through the park design process for Maude Park, specific pedestrian and bicycle connectivity will be considered.

Other Transportation Issues

Hexagon has the following additional recommendations resulting from the site access and circulation evaluation.

- The EWPP proposes to remove parking along one side of Logue, Maude, and Clyde Avenues to provide buffered bike lanes. It is recommended that on-street parking on the east side of Logue Avenue, the north side of Maude Avenue, and the east side of Clyde Avenue along the project frontages be removed. Also, parking along the R6 street frontage at the intersection shall be removed to maintain intersection safety.
- Fifteen-foot curb segments adjacent to the driveways and service streets on Maude Avenue, Logue Avenue, and Clyde Avenue should be painted red to prohibit parking to provide adequate sight distance.
- The bike and scooter share hubs should be well-lit and positioned near (generally within 50 feet) of the main building entrances or at key destinations within the plan area.

1. Introduction

This report presents the results of the vehicle miles traveled (VMT) analysis and multimodal transportation analysis (MTA) conducted for the proposed Middlefield Park Master Plan (MPMP, plan area) in Mountain View, California. The plan area is located within the Mixed-Use Character Area and Employment Area North Character Area of the East Whisman Precise Plan (EWPP) with frontages on Middlefield Road, Ellis Street, Logue Avenue, Maude Avenue, and Clyde Avenue. The southern portion of the plan area is immediately west and adjacent to the Middlefield Light Rail Transit (LRT) Station operated by the Santa Clara Valley Transportation Authority (VTA) (see Figure 1). The project abuts the city limit with the City of Sunnyvale.

The MPMP proposes to demolish 23 existing buildings (totaling approximately 685,000 square feet), surface parking lots, and landscaping, to redevelop an approximately 40-acre plan area with 1,317,000 square feet (s.f.) of office space (632,000 s.f. net new) within five office buildings, up to 1,900 dwelling units within seven residential buildings, up to 41,000 square feet of ground floor retail space in the residential buildings, 9,000 square feet of ground floor community/civic uses, and two office parking structures (see Figure 2)[3]. Additionally, the project would dedicate land for new public parks and open space. The project would be developed in four phases. Site access to the proposed buildings in the MPMP would be provided via Ellis Street, Logue Avenue, Clyde Avenue, and Maude Avenue. As part of the development, Logue Avenue would be extended northward from the existing cul-de-sac to the boundary of the property of the City and County of San Francisco (referred to as the SFPUC or Hetch-Hetchy right of way) with a new cul-de-sac that would provide access to the new service streets along the northern MPMP area boundary.

Because the project is located within the EWPP area, for which an Environmental Impact Report (EIR) was completed in 2019, and is consistent with the EWPP, this MTA focuses on evaluating the project's transportation effects under near-term conditions. The project's cumulative transportation impacts were evaluated in the EWPP EIR.

[3] The Master Plan proposes 30,000 s.f. of retail and 20,000 s.f. of community/civic uses. However, some land uses proposed under the community civic uses would result in traffic patterns more similar to retail uses. Therefore, this analysis conservatively assumes 41,000 s.f. of retail and 9,000 s.f. community/civic uses.

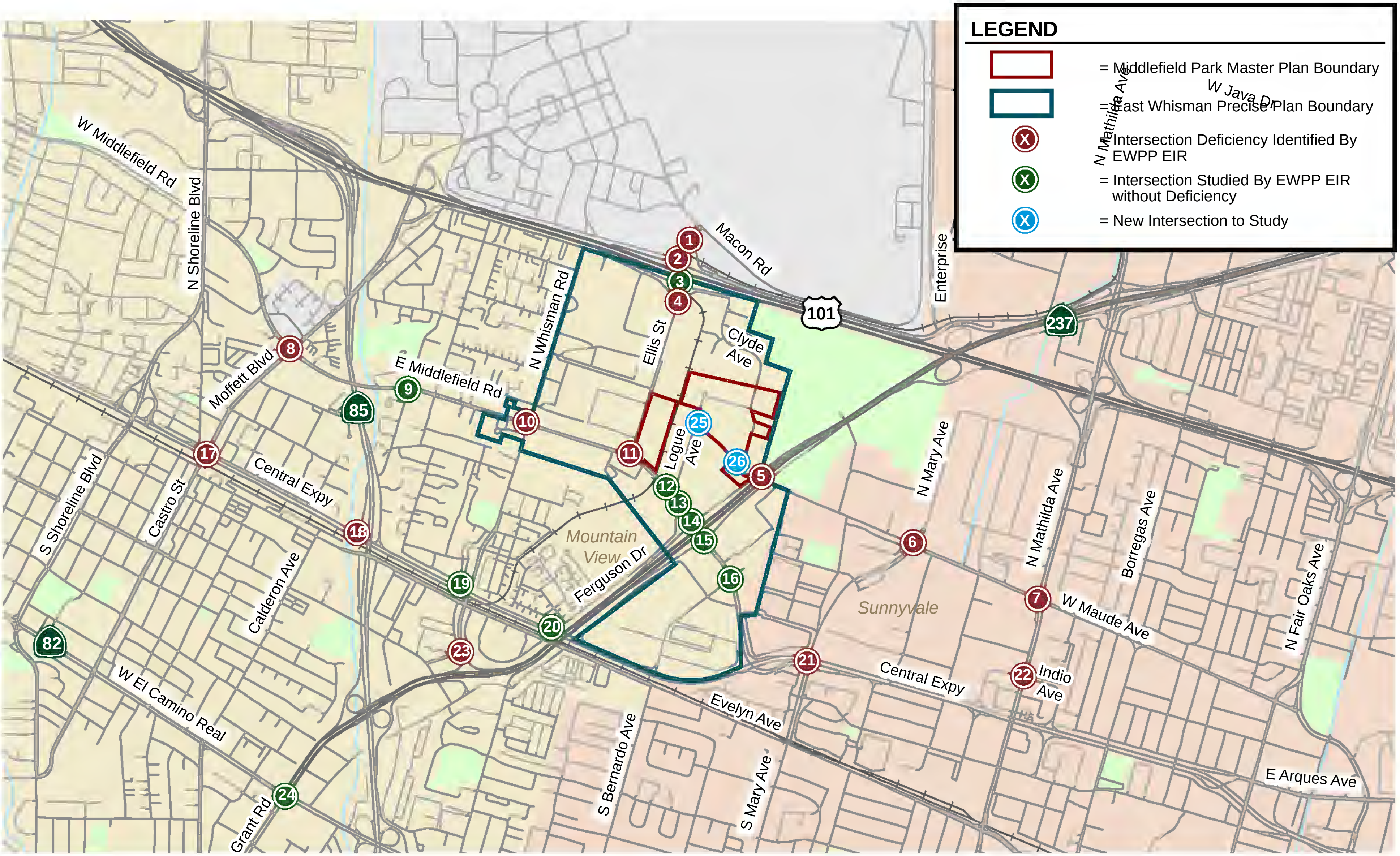


Figure 1
Project Location and Study Intersections

HEXAGON

Source: Middlefield Park Master Plan

Figure 2
Proposed Area Plan

Scope of Study

The purpose of the MTA is to satisfy the requirements of the City of Mountain View, the Congestion Management Program (CMP) of the VTA, and the California Environmental Quality Act (CEQA). Per California Senate Bill 743 (SB743) and CEQA Guidelines, the study includes a VMT analysis. The MTA also evaluates potential transportation effects of the project in accordance with the standards and methodologies set forth by the City of Mountain View and the VTA. The VTA administers the CMP.

Vehicle Miles Traveled (VMT) Analysis

Per California Senate Bill 743, the California Natural Resources Agency, with assistance from the Governor's Office of Planning and Research (OPR), adopted new CEQA guidelines in December 2018. The new guidelines state that automobile delay, as measured by level of service (LOS), will no longer constitute a significant environmental impact under CEQA, and that VMT is considered the most appropriate metric to evaluate a project's transportation impacts. The new CEQA guidelines became effective July 1, 2020. The evaluation of VMT for this project is based on the City's VMT Policy adopted on June 30, 2020, and the EWPP EIR VMT analysis, which was prepared in 2018-19.

Multimodal Transportation Operations Analysis

The MTA includes an analysis of the traffic operational effects of the project on the key intersections and freeway ramps in the project area, an evaluation of traffic operational conditions at proposed midblock crossings and driveways, an evaluation of potential adverse effects on transit services and pedestrian and bicycle facilities, and a review of site access, circulation, parking, and conformance with the EWPP.

Study Intersections

The following 26 study intersections (see Figure 1) were selected based on the intersections studied in the EWPP EIR and in accordance with VTA's *Transportation Impact Analysis (TIA) Guidelines* (October 2014). The intersection list was reduced by removing intersections that did not have a level of service deficiency identified in the EWPP EIR and by removing intersections where the project is not expected to add 10 trips or more per lane. Two unsignalized intersections (#25 and #26) that were not studied in the EWPP EIR but are within the project vicinity and would provide primary access to the project sites were added to the study.

1. Ellis Street and Manila Drive (Mountain View)
2. Ellis Street and US 101 Northbound Ramps (Mountain View)
3. Ellis Street and US 101 Southbound Ramps (Mountain View)
4. Ellis Street and Fairchild Drive (Mountain View)
5. SR 237 Ramps and Maude Avenue (Mountain View)
6. N. Mary Avenue and Maude Avenue (Sunnyvale)
7. W. Maude Avenue and N. Mathilda Avenue (Sunnyvale / CMP)
8. Moffett Boulevard and W. Middlefield Road (Mountain View)
9. Easy Street and E. Middlefield Road (Mountain View)
10. N. Whisman Road and E. Middlefield Road (Mountain View)
11. Ellis Street and E. Middlefield Road (Mountain View)
12. Logue Avenue and E. Middlefield Road (Mountain View)
13. Ferguson Drive and E. Middlefield Road (Mountain View)
14. SR 237 Westbound On-Ramp and E. Middlefield Road (Mountain View)
15. SR 237 Eastbound Off-Ramp and E. Middlefield Road (Mountain View)
16. Bernardo Avenue and E. Middlefield Road (Mountain View)
17. Moffett Boulevard and Central Expressway (Santa Clara County / CMP)
18. SR 85 Southbound Off-Ramp and Central Expressway (Santa Clara County)

19. Whisman Station Drive and Central Expressway (Santa Clara County / CMP)
20. Ferguson Drive and Central Expressway (Santa Clara County / CMP)
21. N. Mary Avenue and Central Expressway (Santa Clara County / CMP)
22. N. Mathilda Avenue and Indio Avenue (Sunnyvale)
23. S. Whisman Road and SR 237 Westbound Ramps (Mountain View)
24. Grant Road/SR 237 and El Camino Real (Mountain View)
25. Logue Avenue and Maude Avenue (Unsignalized) (Mountain View)
26. Clyde Avenue and Maude Avenue (Unsignalized) (Mountain View)

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of traffic. Locally, the AM peak hour of traffic is usually between 7:00 and 10:00 AM, and the PM peak hour is typically between 4:00 and 7:00 PM. It is during these periods that the most congested traffic conditions occur on an average weekday.

Intersection traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing AM and PM peak-hour traffic volumes were obtained from turning-movement counts conducted in 2019 and 2020 pre-COVID-19. New turning movement counts were conducted for intersections with counts older than 2019 and for three intersections with recent counts to be used as baselines. A baseline adjustment factor was applied to the new counts to adjust to typical conditions (pre-COVID-19). A growth rate of 2.5 percent annually was applied to adjust preexisting traffic counts to a 2021 condition.
- ***Existing Plus Project Conditions.*** Existing plus project traffic volumes were estimated by adding the additional traffic generated by the project.
- ***Background Conditions*.** Background traffic volumes were estimated by adding to existing traffic volumes the projected volumes from approved but not yet constructed developments in the vicinity of the project. Lists of approved but not yet constructed developments were obtained from the Cities of Mountain View and Sunnyvale.
- ***Background Plus Project Conditions.*** Background plus project traffic volumes were estimated by adding the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project adverse effects.

Midblock Crossing Locations

The study also evaluated five proposed midblock bike/pedestrian crossings on Ellis Street, Middlefield Road, Logue Avenue, and Clyde Avenue (see Figure 2). These midblock crossings were evaluated to determine the best types of traffic control based on the anticipated roadway traffic and number of pedestrians.

A. Midblock crossing on Ellis Street north of Building O1
B. Midblock crossing on Middlefield Road at the VTA light rail tracks
C. Midblock crossing on Logue Avenue north of Buildings R3
D. Midblock crossing on Clyde Avenue south of Buildings O4 & O5/P1
E. Midblock crossing on Clyde Avenue north of Buildings R5

Private Service Street Entrance/Driveway Intersections

The proposed private service street entrances/driveways on Ellis Street, Maude Avenue, and Clyde Avenue (see Figure 2) were evaluated for intersection traffic operations. These private street entrances were evaluated as stop-controlled intersections with signal warrant analysis.

1. Private service street entrance on Ellis Street between Buildings O1 and R2
2. Driveway entrance on Ellis Street at Buildings R1 and R2
3. Private service street entrance on Logue Avenue for Building O2
4. Private service street entrance on Logue Avenue and Clyde Avenue for Buildings O3 and O4
5. Private service street entrance on Maude Avenue between Buildings R3 and R4/R4 affordable (R4 aff)
6. Private service street entrance on Maude Avenue between Buildings R4/R4 aff and R5
7. Driveway entrance on Maude Avenue for Building R6
8. Private service street entrances on Clyde Avenue for Buildings O4 and O5/P1
9. Driveway entrance on Clyde Avenue to P2

Study Freeway Ramps

Based on VTA's *TIA Guidelines*, a transportation analysis should include a queuing analysis for freeway on-ramps with existing or planned ramp meters and off-ramps controlled by signals at junctions with local streets. The US 101/Ellis Street, SR 237/Maude Avenue, and SR 237/Middlefield Road interchanges provide access to the freeway system from the project area. Therefore, a freeway ramp traffic operations analysis was conducted for these interchanges.

Freeway Segments

Freeway segment analysis was not included for the study because the project is within the development and trip assumptions of the EWPP, for which the freeway segment deficiencies have been identified by the EWPP EIR.

Other Transportation Issues

The study includes an evaluation of potential operational deficiencies to transit services and pedestrian and bicycle facilities, and a review of vehicular site access, truck access and circulation, and parking. In addition, a review of the removal of Street C from the EWPP was conducted.

Intersection Operations Analysis Methodology

This section presents the methods used to determine traffic conditions at the study intersections. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, the City of Mountain View, the EWPP, and Google Earth. The following data were collected from these sources:

- Intersection traffic volumes,
- Lane geometries,
- Signal timing and phasing, and
- A list of approved but not yet constructed developments.

Intersection Level of Service Methodologies and Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Signalized Intersection

The Cities of Mountain View and Sunnyvale evaluate level of service at signalized intersections based on the 2000 *Highway Capacity Manual (HCM)* level of service methodology. This HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. This average delay can then be correlated to a level of service. Table 1 presents the level of service definitions for signalized intersections.

Table 1
Signalized Intersection Level of Service Definitions Based on Average Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.
VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.

This study utilizes TRAFFIX software to determine intersection levels of service based on the 2000 HCM methodology. Since TRAFFIX is approved by VTA as the level of service analysis software for CMP signalized intersections, the Cities of Mountain View and Sunnyvale employ the CMP defaults values for the analysis parameters. TRAFFIX software was used to analyze intersection operations and intersection adverse effects based on the increases in critical-movement delay and the volume-to-capacity ratio (v/c) between no-project and project scenarios.

According to the City's February 2021 MTA Handbook, the standard for signalized intersections is LOS D, except for CMP intersections, County Expressway intersections, and intersections in the Downtown and San Antonio Center planning areas in Mountain View, where the standard is LOS E. Therefore, the LOS D standard applies to all City-controlled intersections.

The City of Sunnyvale has set forth LOS D as the minimum standard, except at CMP intersections and intersections on roadways considered "regionally significant" within Sunnyvale, which have a standard of LOS E. Study intersections within Sunnyvale along Central Expressway and Mathilda Avenue are considered regionally significant.

Unsignalized Intersections

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, delays and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. For side street stop-controlled intersections (i.e., two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets; the level of service is reported based on the average delay for the worst approach. For the all-way stop-controlled intersections, the level of service is based on the average delay for all the intersection approaches. The level of service definitions for unsignalized intersections are shown in Table 2. This study utilizes TRAFFIX software to determine intersection levels of service based on the 2000 HCM methodology for unsignalized intersection.

The City of Mountain View does not have an adopted level of service standard for unsignalized intersections. However, the City strives to maintain LOS D for unsignalized intersections.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Traffic Signal Warrant

An assessment of the need for signalization was conducted for the unsignalized intersections. For this study, the need for signalization is based on the Peak Hour Volume Warrant (Warrant 3) described in the

California Manual on Uniform Traffic Control Devices for Streets and Highways (CA MUTCD), Part 4, Highway Traffic Signals, 2014. This method provides an indication of whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify installation of a traffic signal. Note that this is just one tool used to evaluate whether installation of a traffic signal would be justified. Additional analysis is recommended and may include unsignalized level of service analysis and/or operational analysis such as evaluating vehicle queuing and delay. Other types of traffic control devices, signage, or geometric changes may be preferable based on existing field conditions. Ultimately, the City's professional engineering judgment will be used in the final determination of traffic control devices and improvements.

Intersection Vehicle Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis at study intersections where the project would add a substantial number of vehicle trips to the left-turn movements. The analysis provides a basis for estimating future left-turn pocket storage requirements at the study intersections and is presented for informational purposes only, since Mountain View has not defined a policy related to queuing. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P\ (x=n) = \frac{\lambda^{n}\ e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
$\lambda =$ average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles for a particular left-turn movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles or a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Thus, turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Vehicle queuing at unsignalized intersections is evaluated based on the delay experienced by each turning movement.

Definition of Adverse Operational Effects

Adverse operational effects on signalized intersections are based on the Cities of Mountain View and Sunnyvale and CMP level of service standards. For the unsignalized intersections, the City of Mountain View has applied adverse effect criteria in other traffic studies even though there is no formally adopted level of service policy for unsignalized intersections.

Signalized Intersections

According to the Cities of Mountain View and Sunnyvale and CMP level of service standards, a development is said to create an adverse operations effect on traffic conditions at a signalized intersection if, for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection drops below its respective level of service standard (LOS D or better for all local intersections in Mountain View and Sunnyvale and LOS E or better for CMP and regionally significant intersections in Sunnyvale) when project traffic is added, or
2. An intersection that operates below its level of service standard under no-project conditions experiences an increase in critical-movement delay of four (4) or more seconds, and an increase in critical volume-to-capacity ratio (v/c) of one percent (0.01) or more when project traffic is added.

The exception to this criterion is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the criterion is when the project increases the critical v/c value by 0.01 or more.

Unsignalized Intersections

The City of Mountain View does not have an adopted level of service standard or adverse effect criteria for unsignalized intersections. However, based on other transportation studies prepared for the City, the project is said to create an adverse operational effect on traffic conditions at an unsignalized intersection in the City of Mountain View if for either peak hour:

1. The addition of project traffic causes the average intersection delay for all-way stop-controlled or the worst movement/approach for side-street stop-controlled intersections to degrade to LOS F, and
2. The intersection satisfies the California Manual of Uniform Traffic Control Devices (CA MUTCD) peak-hour volume signal warrant.

Report Organization

This report includes:

- An executive summary.
- Chapter 1 presents the project introduction and analysis/regulatory thresholds.
- Chapter 2 presents the VMT analysis.
- Chapter 3 describes existing conditions including the existing roadway network, transit service, bicycle, and pedestrian facilities.
- Chapter 4 describes the vehicle operational analysis, including the method by which project traffic is estimated, the intersection operations under existing plus project, background, and background plus project conditions, freeway ramp operations, midblock pedestrian crossing assessment, and effects on surrounding neighborhood streets.
- Chapter 5 presents the analysis of site access, circulation, driveway operations, and parking.
- Chapter 6 presents the assessment of bicycle, pedestrian, and transit facilities.
- Chapter 7 presents analysis of other transportation-related issues, including the evaluation of removal of the EWPP proposed Street C, construction phasing, and the project contribution to the EWPP improvements.

2.
Vehicle Miles Traveled Analysis

City VMT Policy

The City of Mountain View VMT Policy establishes screening criteria for developments that are expected to cause a less-than-significant transportation impact under CEQA with no further VMT analysis required. Any project that does not meet all of the screening criteria is subject to further VMT analysis. The proximity to transit screening criterion was developed based on the CEQA Guidelines Section 15064.3, subdivision (b)(1), which states that lead agencies generally should presume that certain projects proposed within a half 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. A major transit stop is defined as an existing rail station, bus rapid transit station, or as the intersection of 2 or more major bus routes with a frequency of service interval of 15 minutes or less during peak commute periods. Based on the CEQA guidelines, the City developed a transit proximity map, which shows areas in Mountain View where this screen applies (see Figures 3 and 4). In addition to proximity to a major transit stop, the project characteristics must meet the following criteria:

- Contain a floor area ratio (FAR) greater than 0.75;
- Provide reduced parking compared to the maximum parking required by the City;
- Is consistent with Plan Bay Area 2050; or
- Does not replace affordable residential units with a fewer number of moderate- or high-income residential units.

Proximity to Transit

The project is located in a transit proximity area because it is located within a half mile of the Middlefield Light Rail Transit (LRT) Station, which is considered a major transit stop.

Floor Area Ratio

The FAR is calculated as the gross floor area divided by the site area. The project would have an FAR of 1.46. Thus, the development meets the minimum requirement to be considered a transit supportive project.

Parking Requirement

Transit supportive projects may not include more parking for use by residents, customers, or employees of the project than required by the City Code. The project would provide fewer parking spaces than the maximum parking required by the EWPP for residential and office uses and provide fewer parking spaces than the minimum required for retail/community/civic uses by the EWPP and City zoning code.

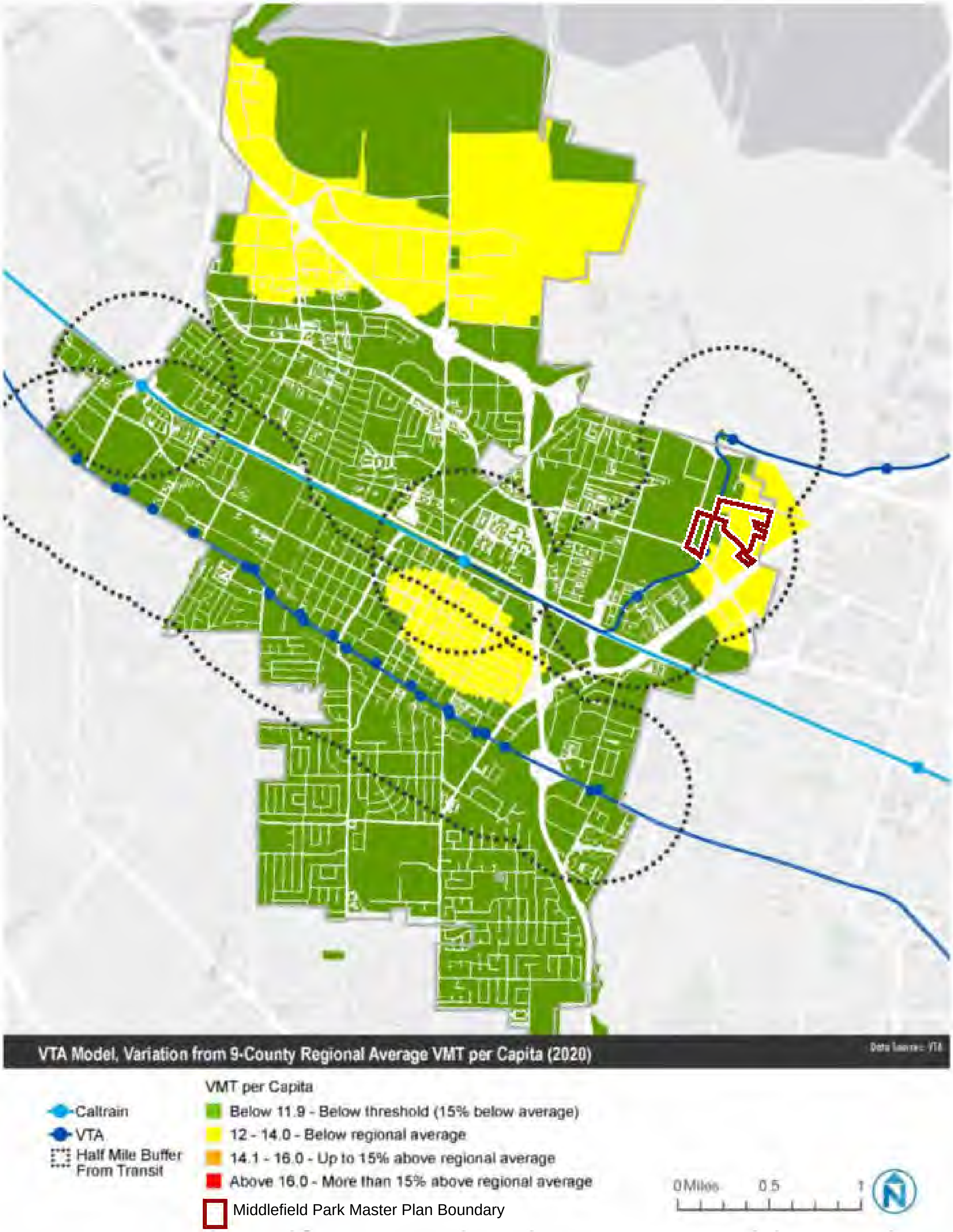


Figure 3
City of Mountain View Residential VMT Map

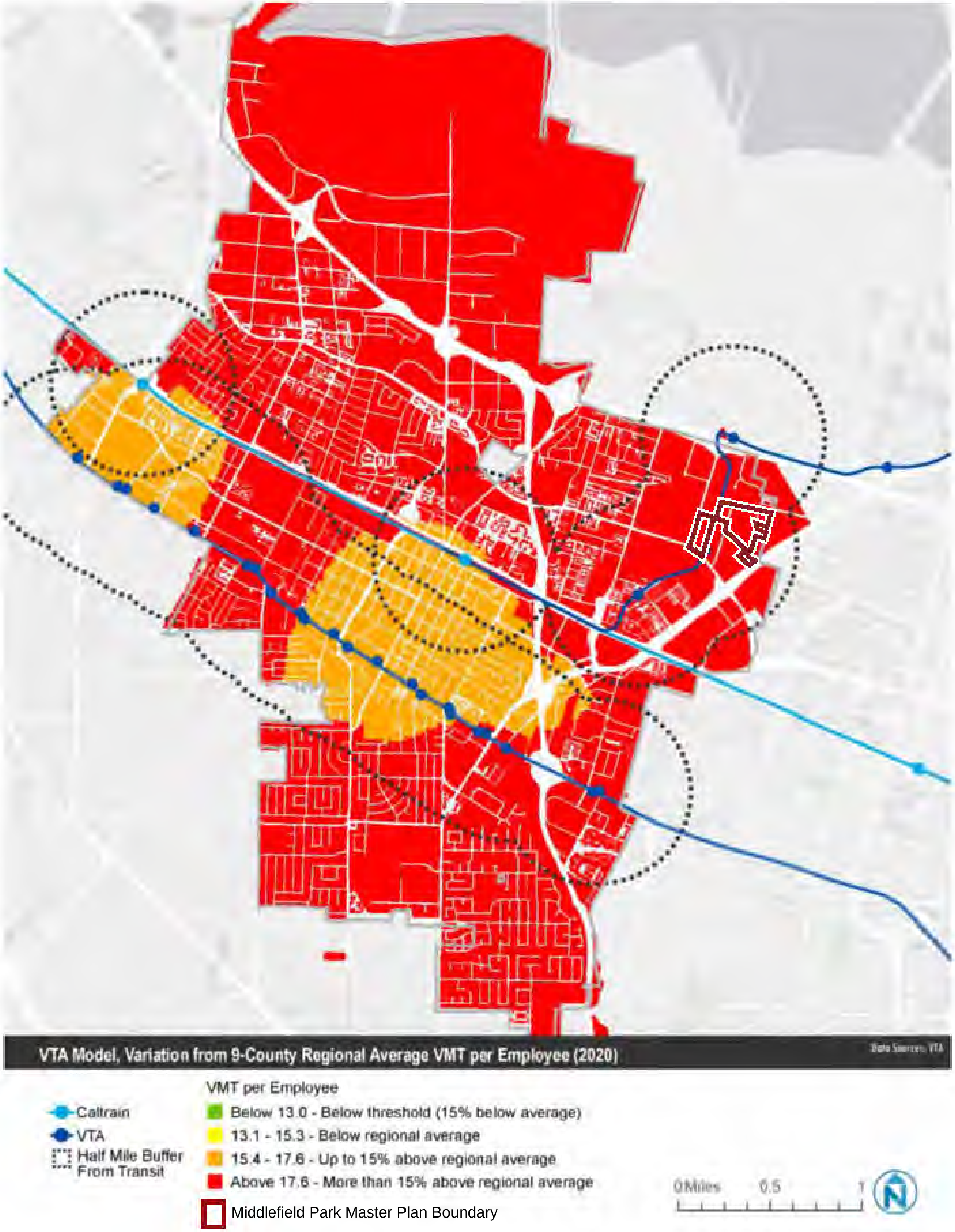


Figure 4
City of Mountain View Employee VMT Map

Plan Bay Area

Plan Bay Area is the Bay Area's regional plan to comply with Senate Bill 735, the State's Sustainable Communities Strategy (SCS) law. SB 735 requires regional metropolitan planning organizations in California to develop SCSs, or long-range plans, that align transportation, housing, and land use decisions toward achieving greenhouse gas (GHG) emissions reduction targets set by the California Air Resources Board (CARB). Plan Bay Area integrates land use and transportation planning and mandates both a GHG emissions from passenger vehicles and light trucks and the provision of adequate housing for the region's projected population growth.

The project is consistent with Plan Bay Area 2050 because it would provide more housing within the EWPP area within walking distance of the Middlefield LRT Station and with bicycle facilities within and adjacent to the project area. The project would also implement transportation demand management (TDM) programs to promote alternative modes of transportation and reduce vehicle trips and GHG emissions.

Affordable Housing

Affordable housing has been shown to generate fewer vehicle miles traveled per capita than market rate housing. Accordingly, the City's VMT Policy states that transit supportive projects must not replace affordable residential units with a smaller number of affordable units, and any replacement units must be at the same level of affordability. The site currently is developed with office buildings only. The project would replace the existing office buildings with a mix of market-rate and affordable residential units, as defined by the City's Below-Market-Rate program, office uses, open space, and retail/community uses.

EWPP EIR VMT

The EWPP EIR was certified in November 2019 prior to the development and adoption of the City's VMT Policy in June 2020. The VMT impact for the EWPP EIR was evaluated based on the total project-generated VMT per service population (residents and employees), while the adopted VMT Policy evaluates VMT impacts based on the home-based trip VMT per capita for residential uses and home-based work trip VMT per employee for employment uses for developments that do not meet the screening criteria.

The EWPP EIR evaluated the VMT impact in two ways to determine whether (1) the project-generated VMT would result in a VMT impact by comparing to the citywide and countywide VMT thresholds (15 percent below existing conditions) and (2) the EWPP's effect on the change in travel on roadways within the City and County by comparing the change in VMT with and without EWPP. For the project-generated VMT, the EIR states the EWPP would result in a project-level and cumulative VMT impact because project generated VMT would be greater than the citywide and countywide thresholds. However, the EIR also states the EWPP would not have an effect on travel on roadways within the City or County because citywide and countywide VMT with the EWPP would be lower than the VMT without the EWPP. Since the project is within the EWPP development area and is included in the EWPP EIR trip assumptions, the project is consistent with the conclusions regarding VMT in the EWPP EIR.

Findings

Per the City's VMT Policy adopted on June 30, 2020, the project meets the proximity to transit screening criterion by having a FAR of 1.46, providing fewer residential and nonresidential parking spaces than the maximum required by the City, fewer retail parking spaces than the minimum required by the City, being consistent with Plan Bay Area, and providing affordable housing units. Therefore, the project is expected to have a less-than-significant impact on VMT based on the adopted City Policy. Also, the project would not result in additional impact than the VMT impact identified in the EWPP EIR as it is consistent with the development assumptions.

3. Existing Transportation Conditions

This chapter describes existing conditions for transportation facilities within and in the vicinity of the plan area including the roadway network, transit services, pedestrian and bicycle facilities, and traffic operations at the study intersections.

Existing Roadway Network

Regional access to the project site is provided by US 101, SR 85, SR 237, and Central Expressway. Local access to the project site is provided via Middlefield Road, Ellis Street, Maude Avenue, Logue Avenue, and Clyde Avenue. Other listed roadways are included as routes to primary streets that access the project site, such as Moffett Boulevard, Whisman Road, Mary Avenue, and Mathilda Avenue. For the purposes of this study, US 101, Middlefield Road, and all parallel streets are considered to run east-west, and cross streets, such as SR 237 and Logue Avenue, are considered to run north-south.

US 101 is eight lanes wide with three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction in the vicinity of the project site. US 101 provides access to the plan area via full interchanges at Ellis Street and SR 237.

SR 85 is a north-south freeway that begins at US 101, east of N. Shoreline Boulevard, extends south towards San Jose, and terminates at US 101 east of the Silicon Valley Boulevard/Bernal Road interchange. SR 85 is six lanes wide (two mixed-flow lanes and one HOV lane in each direction) in the vicinity of the project site. SR 85 provides access to the project site via an interchange at SR 237

SR 237 is a four-lane to six-lane freeway within the vicinity of Sunnyvale that extends west to El Camino Real and east to I-880 in Milpitas. East of Mathilda Avenue, SR 237 has two mixed-flow lanes and one HOV lane in each direction. West of Mathilda Avenue, SR 237 has two mixed-flow lanes in each direction. SR 237 provides access to the project site via full interchanges at Middlefield Road and Maude Avenue.

Central Expressway is an east-west, four-lane to six-lane expressway. It begins at Trimble Road in the east, crosses Sunnyvale, extends westward and transitions into Alma Street. In the study area, Central Expressway has two eastbound lanes and two westbound lanes and a posted speed limit of 50 mph. Central Expressway is mostly grade-separated within Sunnyvale except at Mary Avenue. The Mary Avenue intersection has crosswalks with pedestrian push buttons and signal heads across all legs. There are no sidewalks or bike lanes along Central Expressway, but bikes are allowed to ride on the shoulders. On-street parking is not permitted on this roadway.

Middlefield Road is a mostly east-west four-lane arterial that runs parallel to US 101. It begins at the intersection of Central Expressway in Mountain View and traverses north then westward through Redwood City. Middlefield Road has landscaped medians with left-turn pockets at intersections and has bike lanes and sidewalks on both sides of the street. The bike lanes on Middlefield Road between Thaddeus Drive and Logue Avenue are part-time bike facilities that are used as bike lanes from 2 AM to 7 PM on weekdays and are used for on-street parking for the remaining hours (7 PM to 2 AM) and on weekends. The speed limit is 35 mph. Middlefield Road provides access to project site via its intersections with Ellis Street and Logue Avenue.

Maude Avenue is an east-west arterial street between Logue Avenue in the west and Wolfe Road in the east. Maude Avenue has two lanes west of the SR 237 eastbound frontage road. Between the SR 237 eastbound frontage road and San Angelo Avenue, Maude Avenue has four lanes. Bike lanes exist along both sides of the street for the entire street. Sidewalks exist along both sides of the street except between the SR 237 westbound frontage road and Macara Avenue on the north side and between east of Logue Avenue and the SR 237 westbound frontage road on the south side. West of Clyde Avenue, on street parking is permitted along both sides of the street except between 2 AM and 6 AM. The posted speed limit is 25 mph between Logue Avenue and SR 237. The speed limit increases to 35 mph east of SR 237. Maude Avenue provides direct access to the R2, R3, R4, and R6 buildings of the project site.

Moffett Boulevard is a north-south arterial that extends northward from Central Expressway to US 101. South of Central Expressway, it becomes Castro Street that runs through Downtown Mountain View. The four-lane roadway has a raised median with left-turn pockets at intersections north of Middlefield Road and has a center turn lane with left-turn pockets at intersections south of Middlefield Road. Bike lanes are present on both sides of Moffett Boulevard north of Leong Drive, but do not continue to Middlefield Road. Moffett Boulevard has sidewalks on both sides of the street except the section between the SR 85 southbound on-ramp and Leong Drive where there is no sidewalk on the west side of the road. On-street parking is prohibited north of Middlefield Road and permitted south of Middlefield Road. The speed limit is 40 mph north of Middlefield Road and 35 mph south of Middlefield Road.

Whisman Road is a north-south arterial between Fairchild Drive in the north and Dana Street in the south. Whisman Road has two lanes north of Middlefield Road with landscaped medians and left-turn pockets at intersections. South of Middlefield Road, Whisman Road is a four-lane road with landscaped medians beginning south of Pacific Drive. Bike lanes and sidewalks exist on both sides of the entire street. On-street parking is prohibited along both sides of the street south of Flynn Avenue. On-street parking is permitted along the west side of the street between Fairchild Drive and Flynn Avenue. The speed limit is 35 mph.

Ellis Street is a north-south four-lane arterial between Macon Road in the north and Middlefield Road in the south. Ellis Street has multiple landscaped medians and a two-way left turn lane at driveways with left turn pockets at intersections. Bike lanes exist along both sides of the street south of Fairchild Drive. Sidewalks exist along both sides of the street south of Fairchild Drive. Sidewalks also exist along the west side of the street between Manila Avenue and Fairchild Drive. On-street parking is prohibited along both sides of the entire street. The posted speed limit is 40 mph. Ellis Street provides direct access to the O1, R1, and R2 buildings of the project site.

Logue Avenue is a north-south two-lane local street starting at Middlefield Road in the south and ends with a cul-de-sac north of Maude Avenue. Bike lanes exist along both sides of the street south of Maude Avenue with the southbound bike lane terminating approximately 230 feet before Middlefield Road. Sidewalks exist along both sides of the street, except for a short segment near the cul-de-sac along the west side of the street. On-street parking is permitted along both sides of the street. The posted speed limit is 25 mph. Logue Avenue provides direct access to the O2 and O3 buildings of the project site.

Clyde Avenue is a north-south two-lane local street starting at Maude Avenue in the south and continuing as Fairchild Drive in the north. Bike lanes and sidewalks exist along both sides of the street. On-street parking is permitted along both sides of the street. The posted speed limit is 25 mph. Clyde Avenue provides direct access to the O4 and O5 buildings and the two parking garages (P1 and P2) of the project site.

Mary Avenue is a six-lane roadway south of Central Expressway and a four-lane roadway north of Central Expressway. Mary Avenue travels in the north-south direction. It is classified as a collector north of Central Expressway and an arterial south of Central Expressway. It extends from Almanor Avenue in the north to Homestead Road in the south. Bike lanes exist along the entire street. There are sidewalks on both sides of the street for the whole length of the roadway. On-street parking is prohibited in the project vicinity. It has a posted speed limit of 30 mph in the project vicinity.

Mathilda Avenue is a six to eight-lane roadway. It is classified as an arterial. It extends from E. Caribbean Drive south past El Camino Real, where it transitions to Sunnyvale-Saratoga Road and extends south into Cupertino and Saratoga. Bike lanes exist along both sides of the street north of Washington Avenue in the project vicinity and along the east side of the street north of between Washington Avenue and Iowa Avenue. There are sidewalks on both sides of the street in the project vicinity, except between California Avenue and Washington Avenue as it is grade separated in this area. On-street parking is prohibited in the project vicinity. It has a posted speed limit of 45 mph in the project vicinity.

Existing Transit Services

Existing public transit services in the study area are provided by the VTA and the Mountain View Transportation Management Association (TMA). VTA operates bus and light rail transit (LRT) services in Santa Clara County, and the TMA provides free MVgo shuttle service between the Mountain View Transit Center and corporate campuses in the North Bayshore and Whisman areas.

The VTA bus and LRT routes and MVgo shuttle routes in the project vicinity and the bus/shuttle stops near the project site are summarized in Table 3 and shown on Figure 5.

VTA Bus Service

VTA Local Route 21 serves the project area with bus stops in each direction on Maude Avenue west of Clyde Avenue, on Logue Avenue between Middlefield Road and Maude Avenue, and on Middlefield Road at Ellis Street. The bus stops along Maude Avenue would be the closest stops for Buildings O4, O5, R4, R5, and R6. The bus stops along Middlefield Road would be the closest stops for Buildings O1, R1, and R2. The Logue Avenue bus stops would be the closest stops for Buildings O2, O3, and R3. Table 4 summarizes the distance from the closest buildings to the closest bus stops. Route 21 also stops at the Mountain View Transit Center, approximately 2.0 miles from the plan area. The Mountain View Transit Center provides connections to Caltrain, VTA LRT, several VTA bus routes (21, 40, and 52), MV community shuttle, and MVgo shuttle routes.

VTA Light Rail Transit (LRT)

The LRT Orange Line serves the plan area with the Middlefield LRT Station in the project area. The Middlefield LRT Station is approximately 300 feet from the closest building, Building R1, and approximately 2,500 feet of walking distance (0.47 mile) from the farthest building, Building O5/P1. The Orange Line travels between the Mountain View Transit Center and Alum Rock.

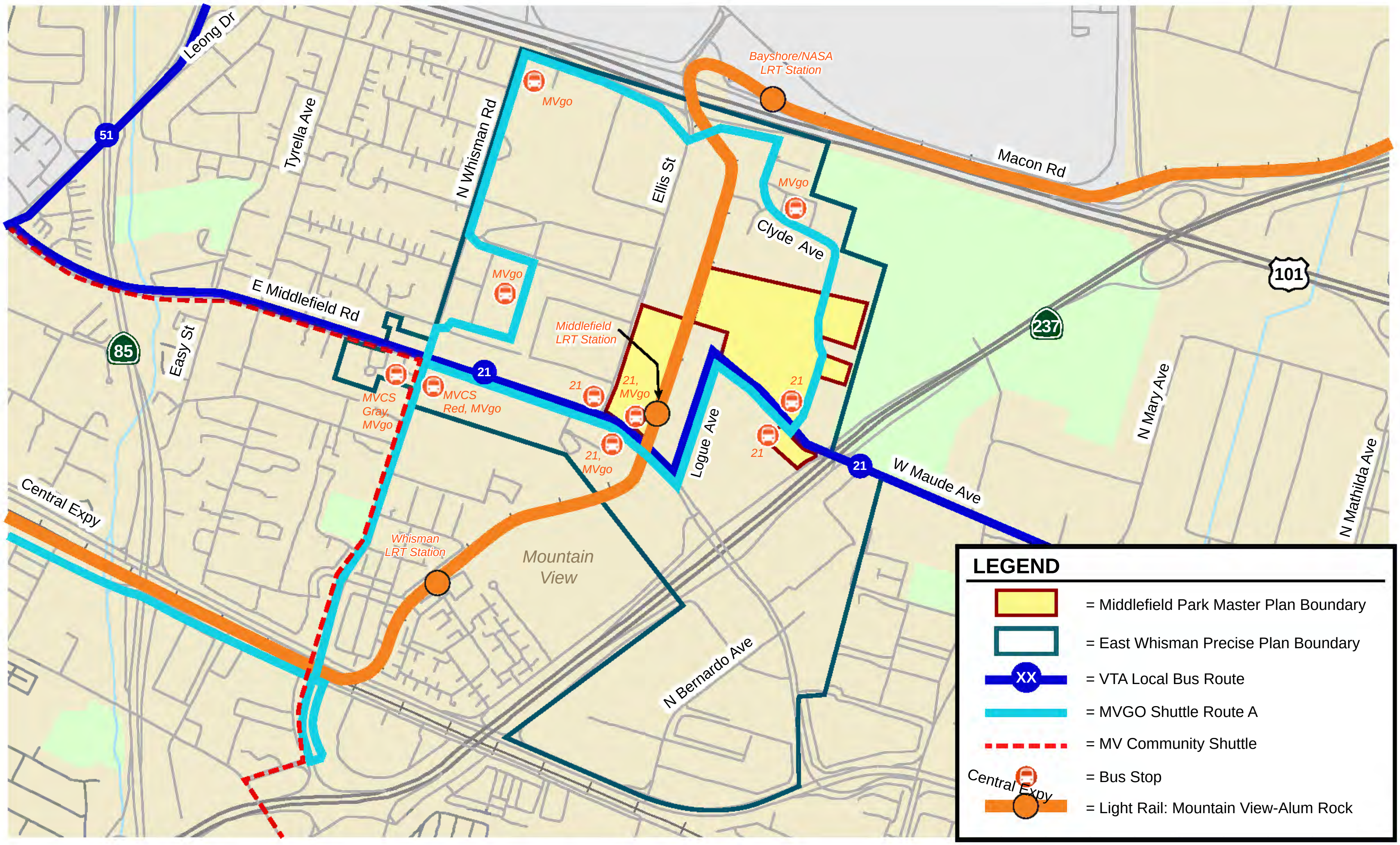


Figure 5
Existing Transit Services

HEXAGON

NORTH
Not to Scale

Table 3
Existing Transit Services

Route	Route Description	Weekday Hours of Operation	Headways[1] (minutes)	Nearby Bus Stops	Walking Distance from Nearest Stop to Nearest Building
VTA Bus Route					
Local Route 21	Stanford Shopping Center - Santa Clara Transit Center	5:30 AM - 9:05 PM	30	Maude Avenue west of Clyde Avenue Middlefield Road at Ellis Street Logue Avenue between Maude and Middlefield Road	50 feet to R5 260 feet to R1 740 feet to R3
Mountain View Shuttles					
Mvgo Route A[2]	Whisman, Clyde and Middlefield	7:05 AM - 10:00 AM, 4:15 - 7:55 PM	30-60	Clyde Avenue east of Clyde Court Middlefield Road east of Ellis Street	1,015 feet to O4/O5 400 feet to R1
MV Community Shuttle[3]	Through out Mountain View, along Middlefield and Whisman	10:00 AM - 6:00 PM	30	Whisman Road south of Middlefield Road	1,975 feet to to R1
VTA Light Rail Transit					
LRT Orange Line	Mountain View - Alum Rock	5:30 AM - 12:45 AM (next day)	20	Middlefield LRT Station	300 feet to R1

Notes:
1. Headways during weekday peak periods as of November 2021
2. Operated by Mountain View Transportation Management Association. It provides free transportation connections between Mountain View Transit Center and the Bayshore/Whisman areas.
3. Operated by Mountain View and Google. It provides free transportation connections between many residential neighborhoods, senior residences and services, city offices, library, park and recreational facilities, medical offices, shopping centers, and entertainment venues throughout Mountain View.

Mountain View Transportation Management Association (TMA) Shuttles

The TMA operates the MVgo shuttle system. This shuttle system is provided through the collection of TMA member dues. MVgo operates four shuttle routes that provide service to employment areas from the Mountain View Transit Center. Three routes serve the North Bayshore area, and one route serves the N. Whisman area. The shuttles are timed to meet Caltrain arrivals during the AM and departures during PM commute periods. MVgo shuttle Route A provides service to the project area, with two bus stops within the vicinity of the area. One bus stop is on Middlefield Road east of Ellis Street, approximately 400 feet from the closest building, Building R1. Another bus stop is on Clyde Avenue, east of Clyde Court at the Samsung Building (665 Clyde Avenue), approximately 1,015 feet north of Buildings O4 and O5/P1. It is likely that patrons in Buildings O1, O2, R1, R2, and R3 would utilize the stop on Middlefield Road, and patrons in Buildings O3, O4, O5 would utlize the stop on Clyde Avenue. The distance between the two bus stops is similar from Buildings R4, R4 aff, R5, and R6.

Google Employee Shuttle

Google operates an employee shuttle system called GBus. Google employees can ride GBus for free to Google office buildings in Mountain View and Sunnyvale. GBus functions as both an inter-office shuttle between various local building locations and a long-haul commute shuttle system. GBus can serve the project area with an existing stop within the Quad Campus parking lot between Whisman Road and Ellis Street. As part of the transportation demand management (TDM) plan, a second GBus stop would be added in the project area within the proposed private service street north of Buildings O3 and O4.

Existing Pedestrian Facilities

Pedestrian facilities consist of sidewalks and crosswalks, which are present along most study area roadways, and at signalized and unsignalized study intersections. Pedestrian signal heads and push buttons are present at the signalized study intersections. Crosswalks are present along the north leg of the unsignalized study intersection of Logue Avenue and Maude Avenue and along the north leg of the unsignalized intersection of Clyde Avenue and Maude Avenue. High-visibility midblock crosswalk curb extensions exists on Logue Avenue between Middlefield Road and Maude Avenue to access the existing path to the Middlefield LRT Station and a midblock crosswalk on Clyde Avenue north of the plan area boundary (in front of 580 Clyde Avenue) is present. Two enhanced midblock crosswalks with rapid rectangular flashing beacons (RRFB) exist on Ellis Street: north of the plan area boundary (in front of 475 Ellis Street) and in front of the proposed Building R2 (in front of 500 E. Middlefield Road). Sidewalks are missing on the north side of Maude Avenue between the SR 237 westbound frontage road and Macara Avenue and on the south side of Maude Avenue between Logue Avenue and the SR 237 westbound frontage road. Sidewalks are also missing along the west side of Logue Avenue near the cul-de-sac.

Within a typical walking distance (a half mile or 10 minutes), pedestrian facilities are present between the plan area and the surrounding land uses, including bus stops in the area. However, continuous sidewalks across a long street block are not equivalent to good pedestrian connectivity. In addition, long distances (wider roads), heavier traffic volumes, and high posted speed limits discourage pedestrian activity. The street network in the project area consists of long blocks: between Ellis Street and Logue Avenue, between Middlefield Road and Maude Avenue, and between Maude Avenue and Clyde Avenue. As discussed in Chapter 7, the project would create better network connectivity through the provision of new pedestrian and bicycle paths and shorter block lengths.

Existing Bicycle Facilities

The bicycle facilities that exist within one mile of the project area (see Figure 6) include a multi-use trail (Class I bikeway), striped bike lanes (Class II bikeway), and shared bike routes/boulevards (Class III bikeway). Bike paths or multi-use trails are shared between pedestrians and bicyclists and separated from motor vehicle traffic. Bike lanes are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes are signed bike routes where bicyclists share a travel lane with motorists. Bike boulevards are modified bike routes with additional treatments that offer convenient and efficient through-routes for bicyclists of all skill levels.

The existing Hetch Hetchy Trail extends from N. Whisman Road and connects to the Stevens Creek Trail. The trail can be accessed from Whisman Road, approximately 0.9 mile from the plan area. East of Whisman Road, the trail connects to a multi-use path between N. Whisman Road and Ellis Street, through the existing Quad Office Campus.

The Stevens Creek Trail extends from the Bay, under US 101 and Middlefield Road, and ends at Dale Avenue/Heatherstone Avenue. The trail can be accessed from a point on Easy Street at the Gladys Avenue intersection, about 1.0 mile from the plan area, from the sidewalk on the south side of Middlefield Road, or from the Hetch Hetchy Trail.

A multi-use path also exists along the west side of the LRT tracks between the northwest corner of the proposed Building O2, across Middlefield Road, into the South Whisman and Whisman Station neighborhoods. The path can be accessed by Middlefield Road, Ellis Street and Logue Avenue through pedestrian walkways that run between these streets and the Middlefield LRT Station. It should be noted that no crosswalk exists on Middlefield Road to connect the existing multi-use path north and south.

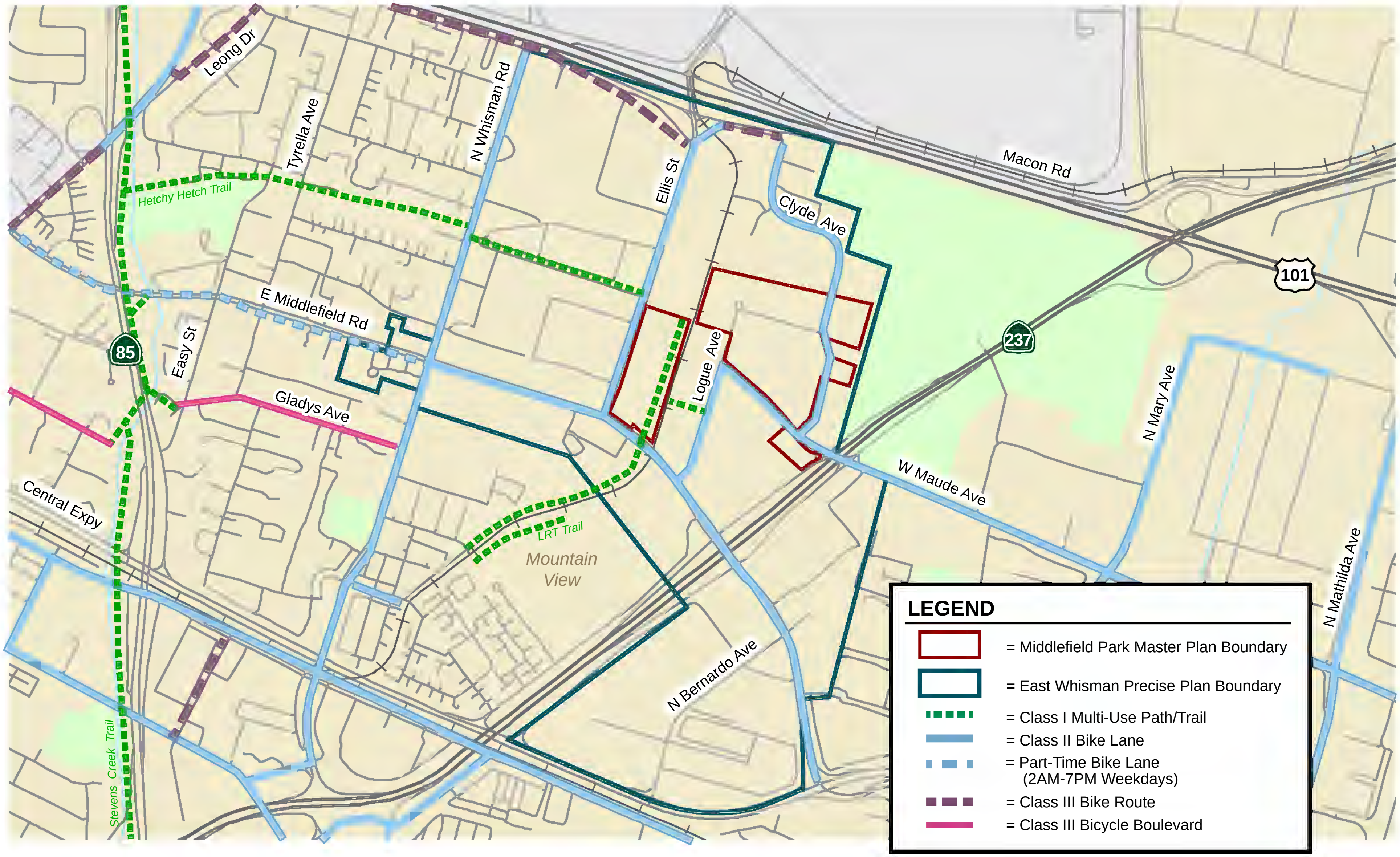


Figure 6
Existing Bicycle Facilities

Striped bike lanes are present along the following street segments:

- Logue Avenue between Middlefield Road and Maude Avenue
- Maude Avenue, except for a short segment between Clyde Avenue and SR 237 eastbound frontage road
- Middlefield Road, between Whisman Road and Bernardo Avenue
- Middlefield Road, west of Whisman Road (part time 2 AM – 7 PM on weekdays)
- Whisman Road, for the entire street
- Ellis Street, for the entire street
- Clyde Avenue, for the entire street
- Evelyn Avenue, east of Hope Street
- Mary Avenue, for the entire street
- Mathilda Avenue, south of Ahwanee Street
- Moffett Boulevard, north of Leong Drive

Some of these streets, while having bike lanes, are more suitable for experienced riders because of the traffic speed. The bike lanes on Middlefield Road west of Whisman Road are part-time bike facilities that are used as bike lanes from 2 AM to 7 PM on weekdays and are used for on-street parking for the remaining hours (7 PM to 2 AM) and on weekends. Because the bike lanes are available only on weekdays, they are primarily suited to bicycle commuters and not to casual riders.

Bike routes are typically designated with sharrows (shared-lane pavement markings) and bikes may take the travel lane. Bike routes are appropriate for low-volume streets with slow travel speeds, especially those on which motorist volumes are low enough that passing maneuvers can use the full street width; on roadways with bicycle demand but without adequate space for bike lanes; and as “gap fillers” where there are short breaks in bike lanes due to right-of-way constraints. The City’s Bike Map shows Leong Drive and Fairchild Drive are designated as existing bike routes. However, there are no sign or sharrows on either street to indicate a bike route.

The City’s Bike Map shows Central Avenue and Gladys Avenue are designated as existing bike boulevards. There are signs on Gladys Avenue at Whisman Road and along Central Avenue to indicate bike boulevards. Bike boulevards prioritize convenient and safe bicycle travel through traffic calming strategies, wayfinding signage, and other measures. One key feature is stop signs are “flipped” - removed from the boulevard and placed on cross streets - to favor the bicycle direction of travel. This change improves bicyclists’ average speed by minimizing unneeded stops. Bicycle boulevard improvements are coupled with traffic calming features to discourage motor vehicle speeding.

As discussed in Chapter 7, the project would provide additional network connectivity through the provision of new pedestrian and bicycle paths and improve the existing bike lanes in the project area.

Existing Intersection Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from field observations and previous traffic studies (see Figure 7).

Existing traffic volumes were obtained from previous traffic studies in 2019 and 2020 (pre-Covid) and new turning movement counts collected in September 2021, between 7:00 and 10:00 AM and between 4:00 and 7:00 PM on a typical weekday.

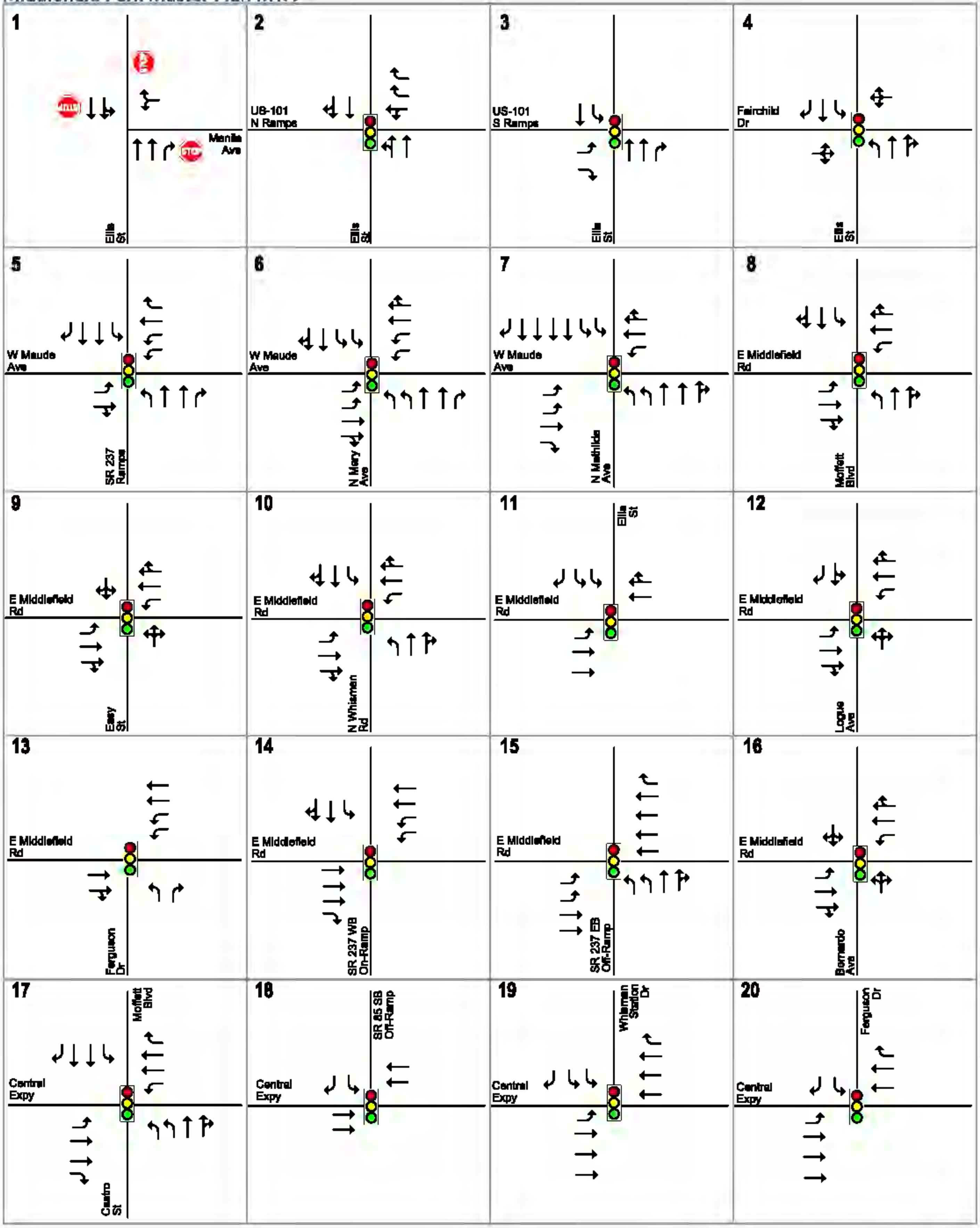


Figure 7
Existing Lane Configurations

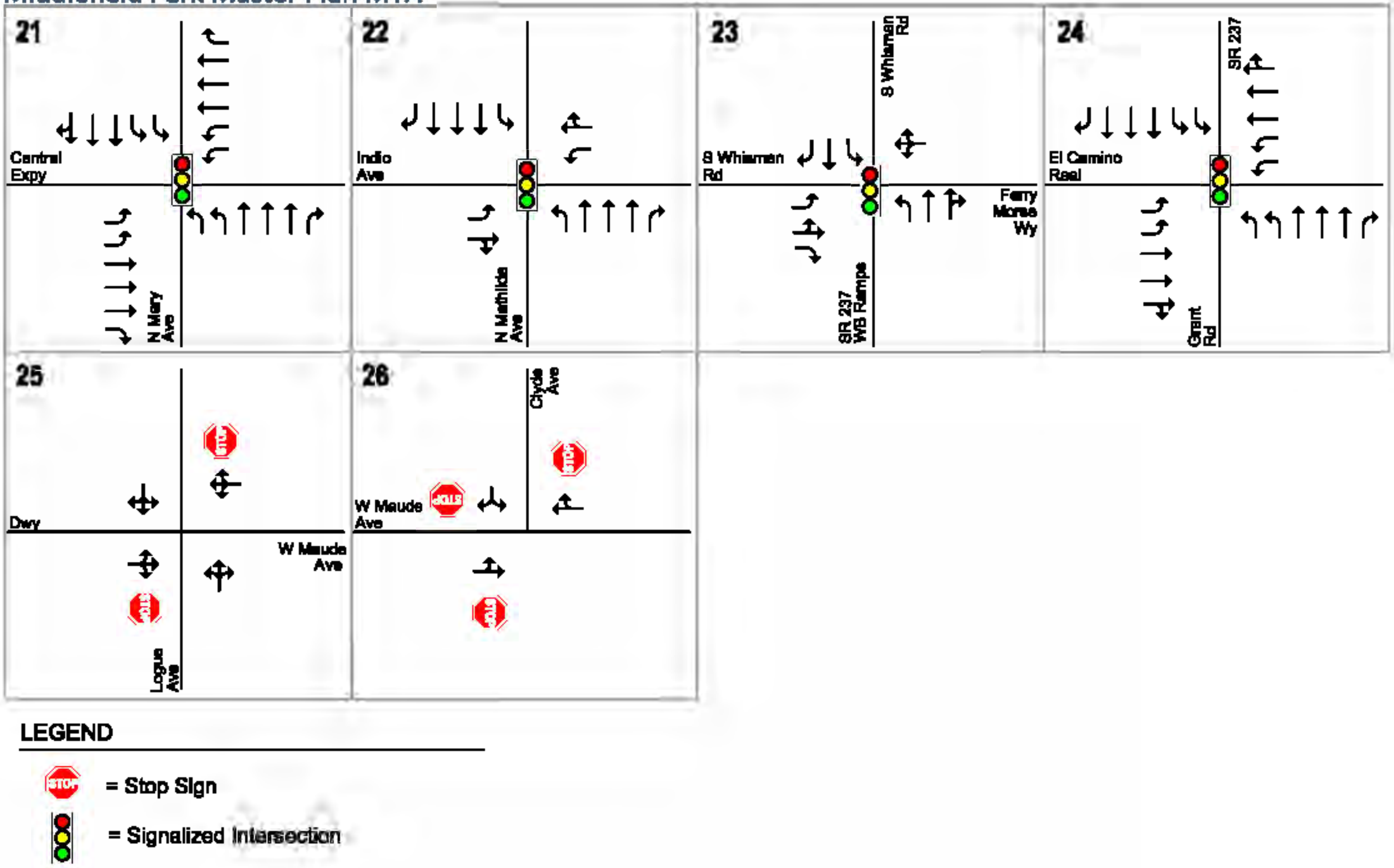


Figure 7
Existing Lane Configurations

Of the 26 study intersections, 17 intersections have turning movement counts conducted prior to Covid-19 in 2019 and 2020. Counts conducted in 2019 were increased by a factor of 2.5 percent per year from 2019 to 2021 (for an overall total of 5.0 percent) to derive the existing volumes. At the Moffett Boulevard and Central Expressway intersection, the PM peak-hour count was collected in 2018 by the CMP. However, due to the street closure on Castro Street, a new PM peak-hour count was not collected, and the 2018 CMP count was increased by a factor of 2.5 percent per year from 2018 to 2021 (for an overall total of 7.5 percent) to derive the existing volumes.

The following intersections did not have recent counts, and traffic volumes were counted on September 28, 2021:

- Mathilda Avenue and Maude Avenue (PM peak hours only)
- SR 85 SB Off Ramp and Central Expressway
- Whisman Station Drive and Central Expressway
- Ferguson Drive and Central Expressway
- Mary Avenue and Central Expressway (PM peak hours only)
- Grant Road/SR 237 and El Camino Real
- Logue Avenue and Maude Avenue
- Clyde Avenue and Maude Avenue

New traffic counts at the above intersections were lower than typical conditions due to Covid-19. Therefore, intersection counts for the Mary Avenue/Maude Avenue, Mary Avenue/Central Expressway, and Mathilda Avenue/Indio Avenue intersections were also conducted on September 28, 2021 to be used as baselines. The baselines determined an adjustment factor to be applied to the new volume counts between current conditions and typical conditions (i.e., pre-Covid-19). Based on the comparison of the 2020 counts and new counts, factors of 2.83 and 2.86 for the AM and PM peak hours, respectively, were applied to the new counts at the Mathilda Avenue/Maude Avenue, Logue Avenue/Maude Avenue, and Logue Avenue/Maude Avenue intersections based on the new counts collected at the Mary Avenue/Maude Avenue intersection. The new counts at these intersections are much lower than the 2020 pre-Covid counts because most employees of the office buildings in the area still work remotely. Factors of 1.67 and 1.62 for the AM and PM peak hours, respectively, were applied to the new counts at the remaining intersections based on the new counts collected at the Mary Avenue/Central Expressway, and Mathilda Avenue/Indio Avenue intersections.

The existing peak-hour intersection volumes are shown in Figure 8. The intersection turning-movement counts conducted for this analysis are presented in Appendix A. Traffic count dates and sources and the adjustment applied to the study intersections are summarized in Appendix B.

Existing Intersection Levels of Service

The results of the intersection level of service show that all study intersections are currently operating at acceptable levels of service except the Grant Road/SR 237 Ramp and El Camino Real intersection, which is operating at LOS F during both the morning and evening peak hours (see Table 4). The intersection levels of service calculation sheets are included in Appendix C.

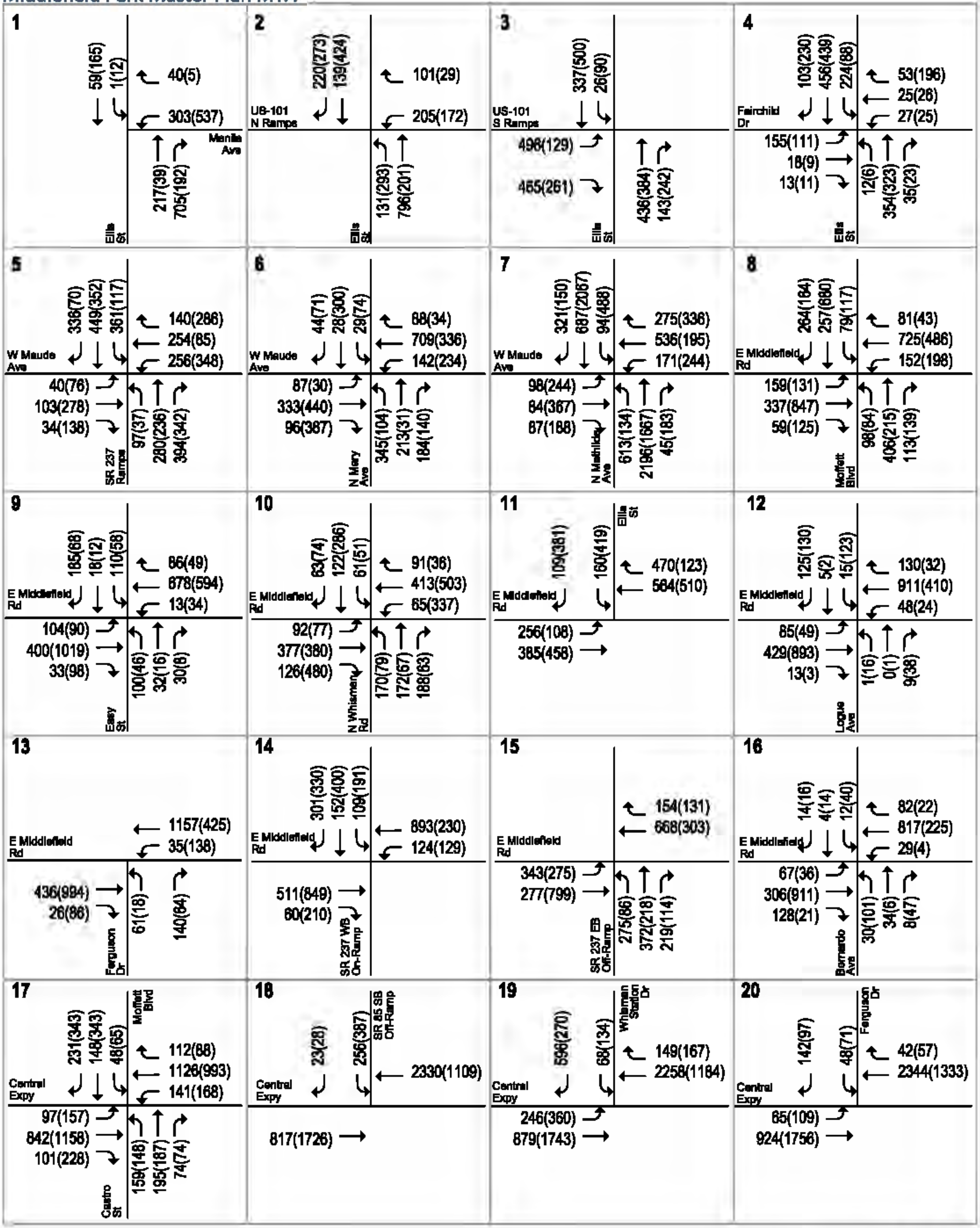


Figure 8
Existing Traffic Volumes

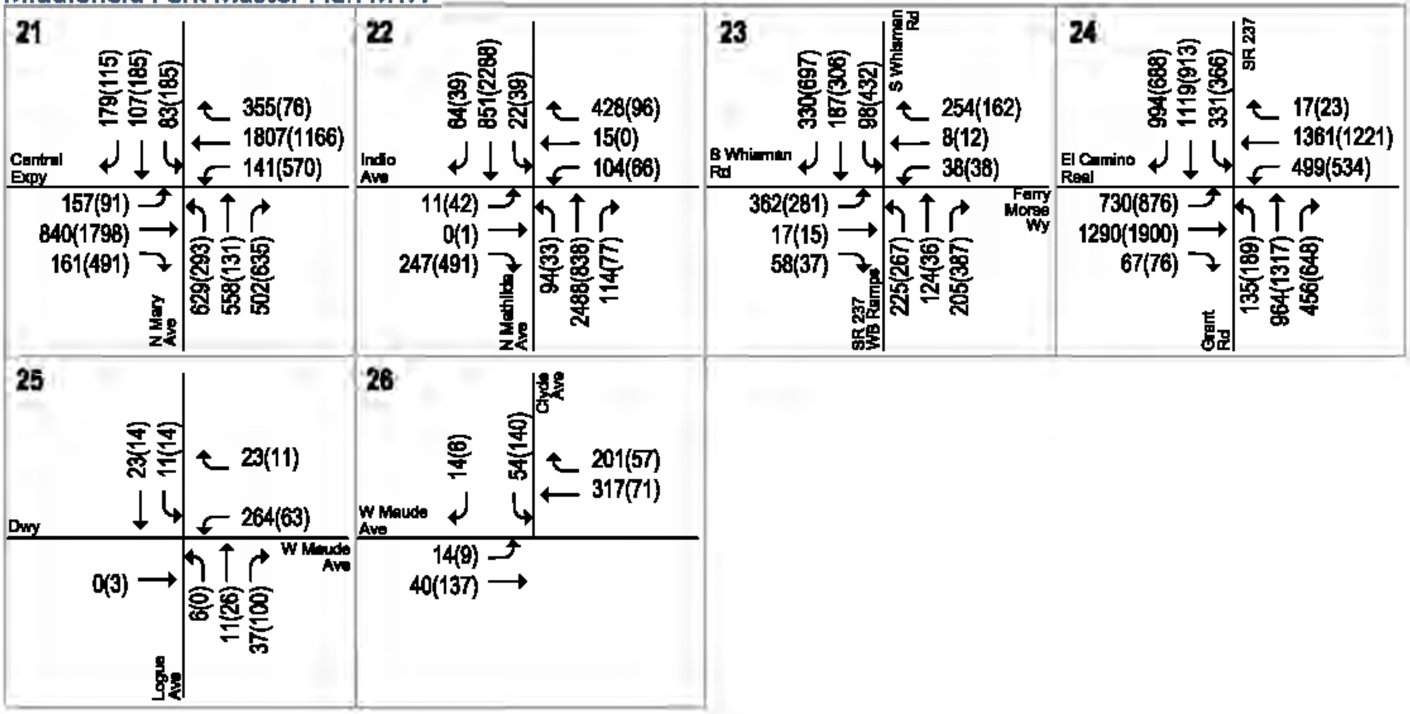


Figure 8
Existing Traffic Volumes

HEXAGON

NORTH
Not to Scale

Table 4
Existing Intersection Levels of Service

						Existing	
ID	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Avg. Delay[1]	LOS
1	Ellis Street and Manila Drive	MV	D	AM	02/04/20	30.9	D
	(all-way stop)			PM	02/04/20	17.8	C
2	Ellis Street and US 101 NB Ramps	MV	D	AM	02/04/20	14.3	B
				PM	02/04/20	17.5	B
3	Ellis Street and US 101 SB Ramps	MV	D	AM	02/04/20	16.6	B
				PM	02/04/20	16.0	B
4	Ellis Street and Fairchild Drive	MV	D	AM	02/04/20	16.2	B
				PM	02/04/20	16.0	B
5	SR 237 Ramps and Maude Avenue	MV	D	AM	05/30/19	29.2	C
				PM	05/30/19	34.3	C-
6	Mary Avenue and Maude Avenue	SV	D	AM	02/05/20	37.2	D+
				PM	02/05/20	35.5	D+
7	Mathilda Avenue and Maude Avenue*	SV/CMP	E	AM	02/05/20	42.4	D
				PM	09/28/21	50.8	D
8	Moffett Boulevard and Middlefield Road	MV	D	AM	05/30/19	37.1	D+
				PM	05/30/19	39.1	D
9	Easy St and Middlefield Road	MV	D	AM	05/30/19	19.2	B-
				PM	05/30/19	11.9	B+
10	Whisman Road and Middlefield Road	MV	D	AM	05/30/19	29.5	C
				PM	05/30/19	31.4	C
11	Ellis Street and Middlefield Road	MV	D	AM	05/30/19	15.1	B
				PM	05/30/19	15.5	B
12	Logue Avenue and Middlefield Road	MV	D	AM	05/30/19	14.0	B
				PM	05/30/19	16.9	B
13	Ferguson Drive and Middlefield Road	MV	D	AM	05/30/19	10.3	B+
				PM	05/30/19	8.8	A
14	SR 237 WB Ramps and Middlefield Road	MV	D	AM	05/30/19	18.9	B-
				PM	05/30/19	14.9	B
15	SR 237 EB Ramps and Middlefield Road	MV	D	AM	05/30/19	24.4	C
				PM	05/30/19	18.8	B-

Table 4
Existing Intersections Level of Service (continued)

ID	Intersection	Jurisdiction	LOS Standard	Peak Hour	Count Date	Existing Avg. Delay[1]	Existing LOS
16	Bernardo Avenue and Middlefield Road	MV	D	AM	05/30/19	11.0	B+
				PM	05/30/19	15.4	B
17	Moffett Boulevard and Central Expy*	SCC/CMP	E	AM	05/22/19	41.6	D
				PM	11/01/18	58.2	E+
18	SR 85 SB Off Ramp/Central Expy	SCC	D	AM	09/28/21	10.8	B+
				PM	09/28/21	13.8	B
19	Whisman Station Drive and Central Expy*	SCC/CMP	E	AM	09/28/21	25.4	C
				PM	09/28/21	10.7	B+
20	Ferguson Drive and Central Expy*	SCC	D	AM	09/28/21	5.7	A
				PM	09/28/21	3.1	A
21	Mary Avenue and Central Expy*	SCC/CMP	E	AM	02/06/20	51.1	D-
				PM	09/28/21	62.1	E
22	Mathilda Avenue and Indio Avenue	SV	E	AM	02/05/20	36.7	D+
				PM	02/05/20	38.3	D+
23	Whisman Road and SR 237 WB Ramps	MV	D	AM	05/30/19	33.8	C-
				PM	05/30/19	35.3	D+
24	Grant Road/SR 237 and El Camino Real*	Caltrans/CMP	E	AM	09/28/21	**102.0**	**F**
				PM	09/28/21	**94.0**	**F**
25	Logue Avenue and Maude Avenue	MV	D	AM	09/28/21	10.7	B
	(unsignalized)[2]			PM	09/28/21	10.0	B
26	Clyde Avenue and Maude Avenue	MV	D	AM	09/28/21	11.1	B
	(all-way stop)			PM	09/28/21	8.3	A

Notes:
* Denotes VTA CMP intersection. SCC = Santa Clara County, MV = Mountain View, SV = Sunnyvale
1. Weighted average control delay measured in seconds per vehicle.
2. Worst movement delay (seconds per vehicle) and LOS are reported for stop-controlled intersections.
Bold indicates a substandard level of service.

4. Motor Vehicle Operations Analysis

This chapter presents the intersection operations analysis including the method by which project traffic is estimated, the results of intersection level of service analysis for existing plus project, background, and background plus project, any adverse effects to intersection level of service caused by the project, intersection vehicle queuing, freeway ramp traffic operations, midblock pedestrian crossings, and effects on surrounding neighborhood streets. A potential adverse effect on a study intersection is not considered a CEQA impact.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed project was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Trip generation estimates (see Table 1) for the mixed-use development are based on standard trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition and the trip caps for new office developments in the EWPP area.[4] For a consistent comparison with the EWPP EIR, the ITE 10th Edition Manual was used. Internal and transit trip reductions were applied to the project according to the VTA *Transportation Impact Analysis (TIA) Guidelines*. A pass-by trip reduction was also applied to the project's retail uses. Net project trip generation on the surrounding roadway network was estimated by further crediting trips generated by the existing land uses on site.

[4] The EWPP identifies an area-wide average trip cap of 0.95 a.m. and 0.88 p.m. peak-hour trips per 1,000 square feet of office and R&D sites to minimize vehicle trips into and out of East Whisman gateways. The 465 Fairchild Dr/600 Ellis Street Office Project transportation analysis, prepared by Fehr Peers dated September 2020, analyzed the combination of existing (legacy) office development not subject to TDM requirements and future new office development that will be subject to TDM requirements in order to refine the trip generation rate necessary for future new office development to be compliant with the gateway trip cap volumes. The resulting trip cap for new office development is 0.83 a.m. and 0.72 p.m., which includes the incorporation of TDM measures required by the EWPP.

Table 5
Project Trip Generation Estimates

						Daily		AM Peak Hour				PM Peak Hour			
	ITE	ITE	Reduction						Trip				Trip		
Land Use[1]	Code	Land Use	%	Size		Rate	Trip	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Uses															
Google Office Buildings		Based on Trip Cap Requirement		1,317	ksf	5.25	6,914	0.833	943	154	1,097	0.723	152	800	952
Multifamily Housing	221	Multifamily Housing (Mid-Rise)		1,900	du	5.44	10,336	0.36	178	506	684	0.44	510	326	836
Housing & Retail (15%)[2]			*15%*				*-232*		*-2*	*-4*	*-6*		*-12*	*-11*	*-23*
Housing & Employment (3%)[2]			*3%*				*-310*		*-5*	*-15*	*-20*		*-15*	*-10*	*-25*
Transit Reduction (9%)[2]			*9%*				*-881*		*-15*	*-44*	*-59*		*-43*	*-28*	*-71*
Multifamily Housing Trips							***8,913***		***156***	***443***	***599***		***440***	***277***	***717***
Retail[3]	820	Shopping Center		41	ksf	37.75	1,548	0.94	24	15	39	3.81	75	81	156
Housing & Retail (15%)[2]			*15%*				*-232*		*-4*	*-2*	*-6*		*-11*	*-12*	*-23*
Retail Passby (Daily=30%, AM PH=0%, PM PH=30%)[4]			*30%*				*-395*		*0*	*0*	*0*		*-19*	*-21*	*-40*
Retail Trips							***921***		***20***	***13***	***33***		***45***	***48***	***93***
Community/Civic Space[3]	495	Recreational Community Center		9	ksf	28.82	259	1.76	11	5	16	2.31	10	11	21
Maude Park	411	Public Park		5	acres	15.38	77	0.02	0	0	0	3.83	10	9	19
Project Trips After Reductions							**17,084**		**1,130**	**615**	**1,745**		**657**	**1,145**	**1,802**
Existing Land Uses															
Existing Office Buildings	710	General Office Building		685	ksf	9.74	6,672	1.16	684	111	795	1.15	126	662	788
Transit Reduction (6%)[2]			*6%*				*-400*		*-41*	*-7*	*-48*		*-8*	*-39*	*-47*
Total Existing Trips							**6,272**		**643**	**104**	**747**		**118**	**623**	**741**
Net Project Trips							**10,812**		**487**	**511**	**998**		**539**	**522**	**1,061**

Source: ITE Trip Generation Manual, 10th Edition 2017

Notes:

[1] Daily, AM, and PM peak hour average rates published in ITE Trip Generation Manual, 10th Edition, were used for Multifamily Housing, Retail, and Community/Civic Space uses. Maude Park trips were estimated using the fitted-curve equations for daily and PM peak-hour trips and the average trip rate for AM peak-hour trips. Daily trip rate and AM and PM peak-hour trip cap rates developed for the 465 Fairchild Drive office project were used for the Google office uses.

[2] Trip reductions based on Table 1: Standard Auto Trip Reduction Rates from the *VTA Transportation Impact Analysis Guidelines, October 2014.*

[3] The Master Plan proposes 30,000 s.f. of retail and 20,000 s.f. of community/civic uses. However, land uses proposed under the community civic uses category would result in traffic patterns more similar to retail uses. Therefore, this analysis conservatively assumes 41,000 s.f. of retail and 9,000 s.f. community/civic uses.

[4] Pass-by trip reduction is based on the maximum allowable pass-by trip reduction rate in the Santa Clara Valley Transportation Authority Transportation Impact Analysis Guidelines, October 2014 for the daily and PM peak hour. Hexagon assumes no pass-by trip reduction during the AM peak hour for retail uses.

Gross Project Trip Generation

Through empirical research, data has been collected that show trip generation rates for many types of land uses. The data research is compiled in the publication *Trip Generation Manual, 10th Edition,* by the Institute of Transportation Engineers (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development.

Trips that would be generated by the proposed uses were estimated using the ITE trip rates for, “Multifamily Housing Mid-Rise” (Land Use 221), “Shopping Center” (Land Use 820), “Recreational Community Center” (Land Use 495), and “Public Park” (Land Use 411). For the proposed office uses, on the other hand, trip rates were determined based on the trip caps for new office development in the EWPP. Trips generated by the existing offices on the site were estimated using ITE trip rates for “General Office” (Land Use 710).

A description of the source of trip generation rates for each land-use is provided below:

- ***Google Office.*** The trip estimate is based on the daily trip rate and peak-hour trip cap rates for new office developments in the EWPP area. The trip cap rates were determined through the transportation analysis for the 465 Fairchild Drive/600 Ellis Street office project at 0.83 trips per ksf during the AM peak hour and 0.72 trips per ksf during the PM peak hour, which is inclusive of TDM measures required by the EWPP.
- ***Residential.*** The trip estimate is based on the ITE Land Use code 221: Multifamily Housing (Mid-Rise), which includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three to ten levels.
- ***Retail.*** The trip estimate is based on ITE Land Use code 820: Shopping Center. This category includes the trip data for a wide scale of retail/commercial uses, from neighborhood centers to regional centers. It includes several types of retail/commercial uses like retail stores, restaurants, banks, grocery store, and health clubs, etc. that are typically present in shopping centers. Since specific uses of the proposed retail/commercial spaces are unknown, it is reasonable to use the trip rates for shopping centers for the retail/commercial space as it includes a variety of uses that can serve a visitor in one vehicle trip.
- ***Community/Civic Space.*** The trip estimate is based on ITE Land Use code 495: Recreational Community Center. This category includes the trip data for a stand-alone public facility similar to and including YMCAs. These facilities also typically include meeting rooms, classes, daycare, and clubs for adults and children, etc.
- ***Maude Park.*** The trip estimate is based on the ITE Land Use code 411: Public Park. This category includes data for public parks that include swimming facilities, trails, ball fields, soccer fields, and picnic facilities. Because Maude Park is large (over 5 acres) and could include active recreational use (i.e., a sports field, a community pool, picnic/event areas), it is not considered as passive open space. Therefore, trips associated with the park were estimated using the ITE trip rates.

Trip Adjustments and Reductions

Because the project would provide office, residential, and retail mixed-use on site, some residents would patronize the retail and office businesses, which would result in the internalization of some project trips. Per the VTA TIA Guidelines, internal trip reductions of 15% between retail and residential uses and 3% between residential and office uses were applied to the project. The trip reduction factors were first applied to the smaller trip generator; then the same trips were subtracted from the larger trip generators to account for both trip ends.

The project is located within 2,000 feet of the VTA Light Rail Middlefield Station. Therefore, per the VTA TIA Guidelines, a 9% transit reduction was applied to the residential uses. This reduction is supported by a combination of the project's access to public transit and proposed TDM program, which includes access to local transportation information.

The internalization and transit reduction factors for the office uses were not applied because the trip cap rates for new office developments in the EWPP area, which are 28 and 37 percent lower than the ITE trip rates for the AM and PM peak hours, respectively, account for internalization and TDM measures. Therefore, additional VTA internalization and transit reduction were not applied to the office uses. According to the City's Greenhouse Gas (GHG) Reduction Program, the project would be required to achieve a minimum 9 percent reduction for nonresidential land uses with 50 employees or more. Because the project would be required to achieve the trip caps through the TDM plan, it would meet the reduction goal required by the GHG Reduction Program.

In addition, trip generation for retail uses is typically adjusted to account for pass-by trips. Pass-by trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Pass-by trips are therefore excluded from the traffic projections (although pass-by traffic is accounted for at the site entrances). An average pass-by trip reduction of 30% was applied to the daily trips and the PM peak-hour trips of the retail component of the project based on the maximum allowable pass-by reduction per the VTA TIA Guidelines.

Existing Trip Credits

The project would demolish approximately 685,000 square feet of existing office buildings as part of the proposed project. The trips generated by the existing office buildings on the site were estimated using ITE average trip rates for General Office Building. A transit reduction factor was applied to the office uses per the VTA TIA Guidelines. Due to Covid-19, most employees are working remotely. Therefore, trip generation counts were not conducted for the existing buildings, and the ITE trip rates were used to estimate the existing trips. Existing trip credits account for the trips that were generated by the existing office buildings, all of which are occupied or were occupied recently.

Net Project Trips

After applying the applicable trip reductions and existing trip credits, the net new project trips generated by the proposed land uses on the roadway network would be 10,812 daily trips, including 998 AM peak hour trips (487 inbound trips and 511 outbound trips), and 1,061 PM peak hour trips (539 inbound trips and 522 outbound trips) (see Table 5).

Trip Distribution and Assignment

The trip distribution patterns for the office and residential uses were estimated based on the trip distributions for the 465 Fairchild Drive/600 Ellis Street office project and the 355 E. Middlefield Road residential project, respectively. Both projects are located in the EWPP area, and the trip distributions were informed by the overall EWPP distribution. The trip distribution for the retail and community uses of the project was estimated based on the locations of complementary land uses. It is expected that the project retail and community uses would serve mostly the area in the vicinity of the project area. The trip distribution patterns are shown on Figure 9.

The peak-hour trips generated by the existing and proposed uses were assigned to the roadway system based on the directions of approach and departure, the roadway network connections, and the locations of project driveways. Figure 10 show the assignment of the net project traffic at the study intersections. A tabular summary of project traffic at each study intersection is contained in Appendix B.

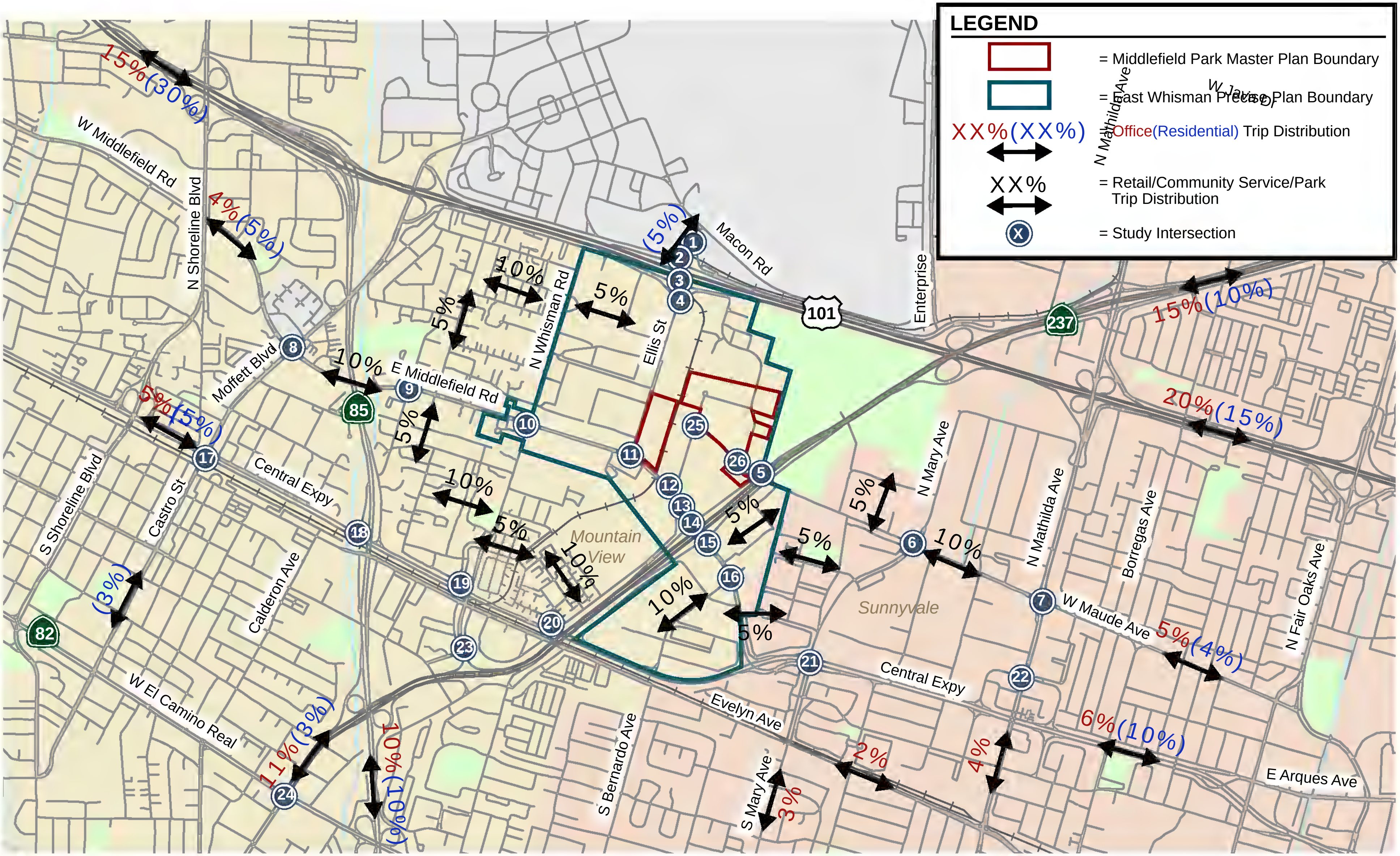


Figure 9
Project Trip Distribution

HEXAGON

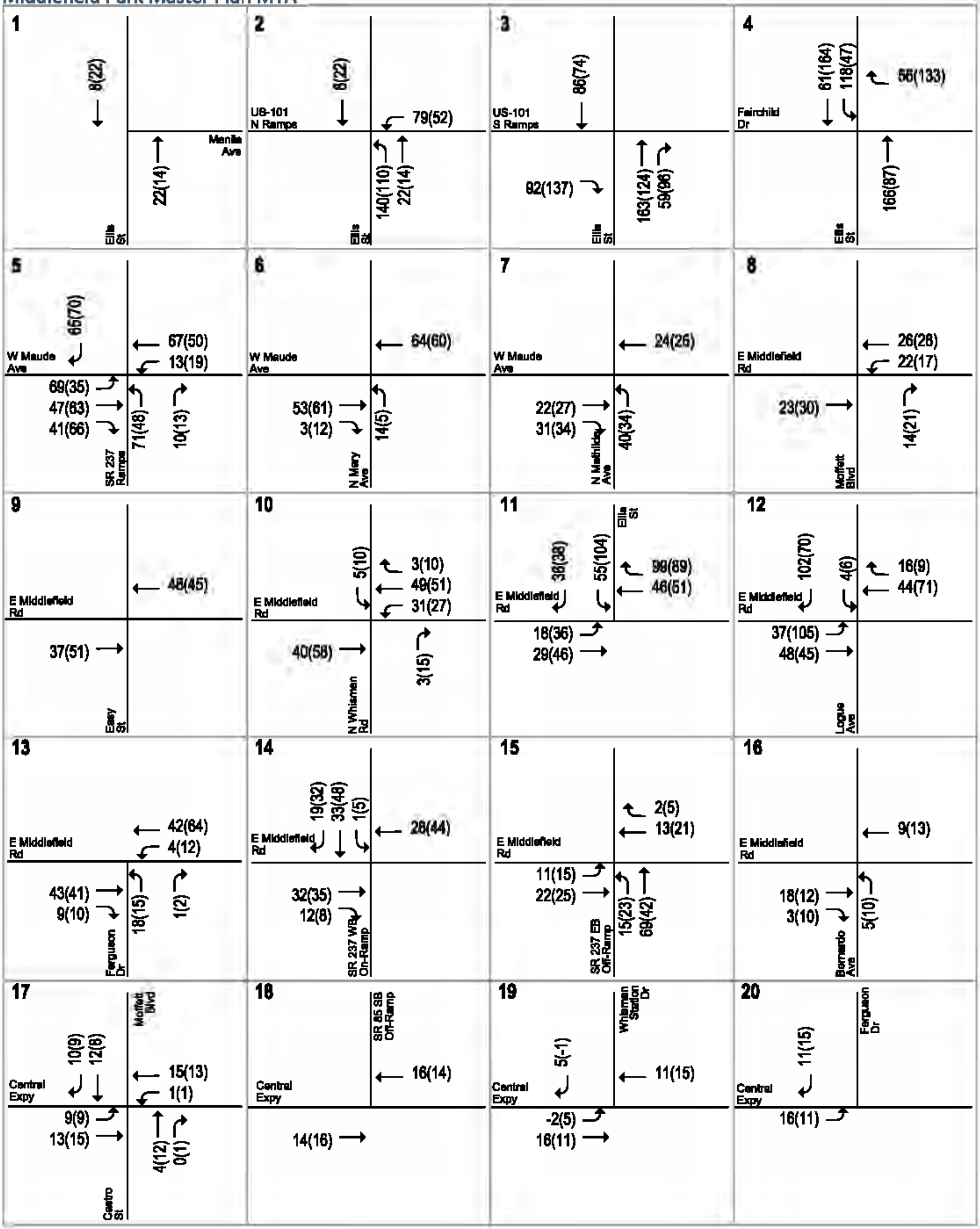


Figure 10
Project Trip Assignment

HEXAGON

NORTH
Not to Scale

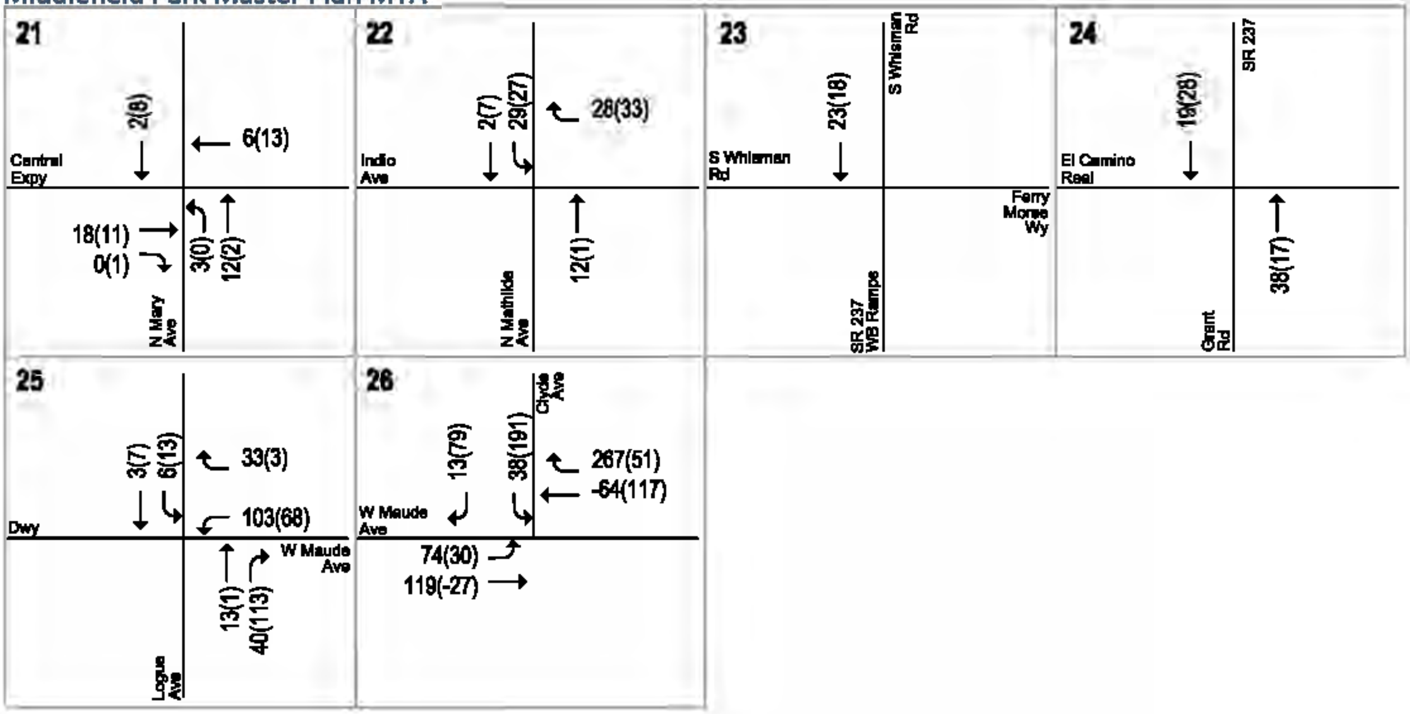


Figure 10
Project Trip Assignment

Intersection Traffic Operations Analysis

The intersection operations analysis is intended to quantify the operations of the study intersections and to identify potential adverse effects due to the addition of project traffic. The study intersections are located in the Cities of Mountain View and Sunnyvale and are evaluated based on the respective cities' and CMP's intersection analysis methodologies and standards in determining potential adverse operational effects due to the project, as described in Chapter 1.

Roadway Network

The roadway network under background and project conditions is assumed to be the same as under existing conditions because there are no planned and funded transportation improvements at the study intersections that would alter the existing intersection lane configurations, and the project would not alter the existing intersection lane configurations.

Traffic Volumes

Existing Plus Project Traffic Volumes

Project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 11).

Background Traffic Volumes

Background traffic volumes for the study intersections (see Figure 12) were estimated by adding to the existing traffic volumes the trips generated by nearby approved projects that have not been constructed or occupied.

Lists of approved projects were obtained from the Cities of Mountain View and Sunnyvale. Hexagon considered both the location and size of the approved projects in order to eliminate those that were too far away or too small to affect traffic conditions of the study intersections. The approved projects considered for the study are listed in Appendix D. Vehicle trips from the approved projects were obtained from the project's TIA or environmental document (Initial Study or EIR), if available. For projects without a traffic study, trip estimates were developed using rates published in the *Trip Generation Manual*. The estimated trips were assigned to the study intersections according to distributions identified in the development traffic studies, if available, or knowledge of the study area.

Background Plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 13).

The approved trips and traffic volumes for all components of traffic are tabulated in Appendix B.

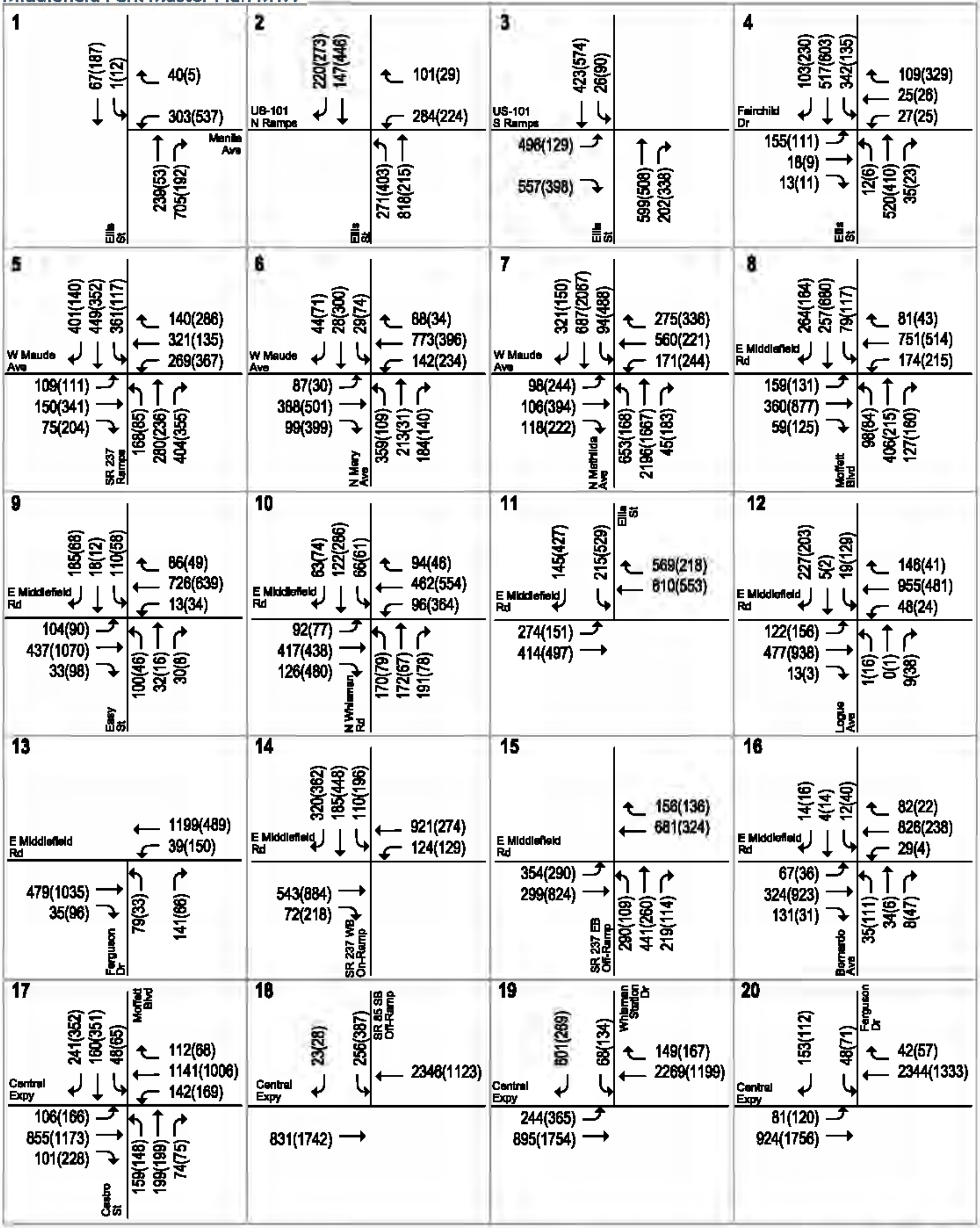


Figure 11
Existing Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

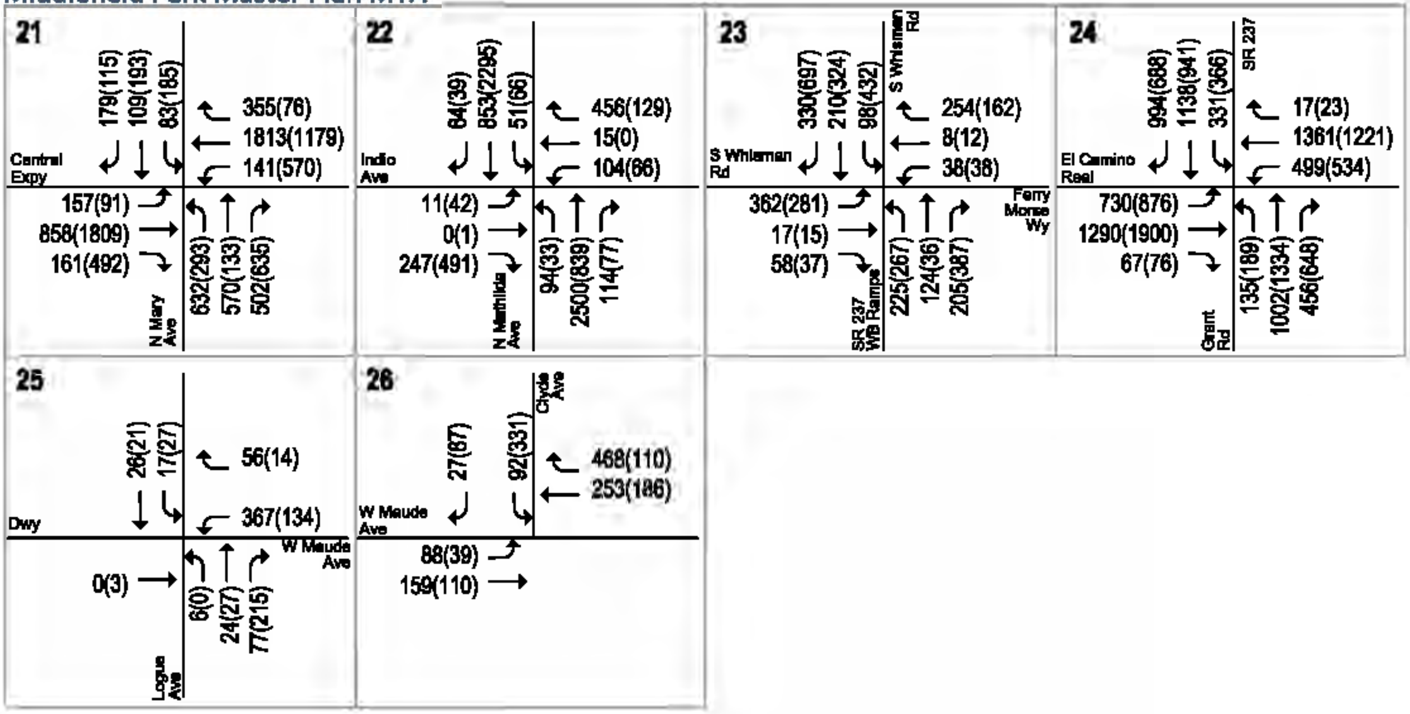


Figure 11
Existing Plus Project Traffic Volumes

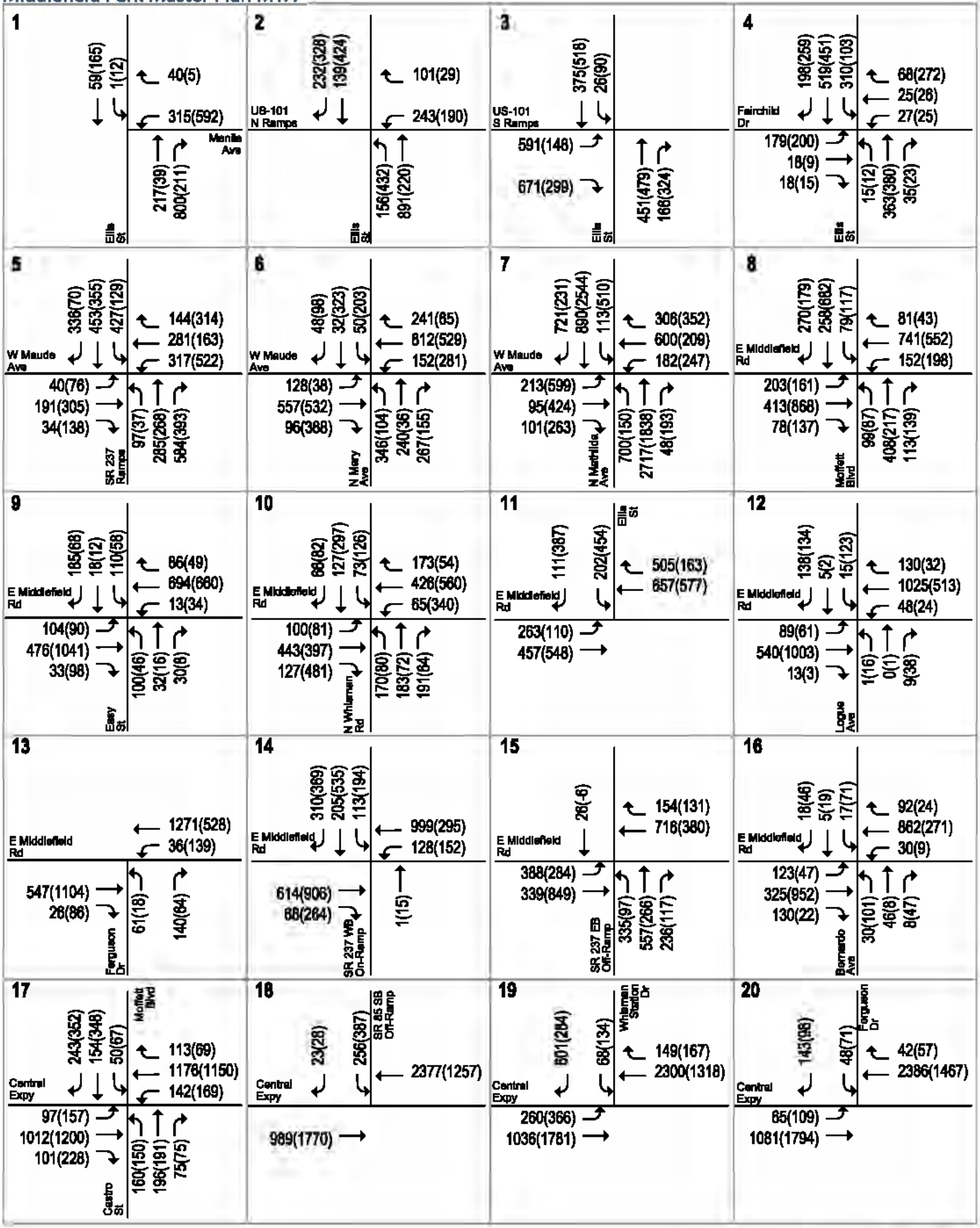


Figure 12
Background Traffic Volumes

NORTH
Not to Scale

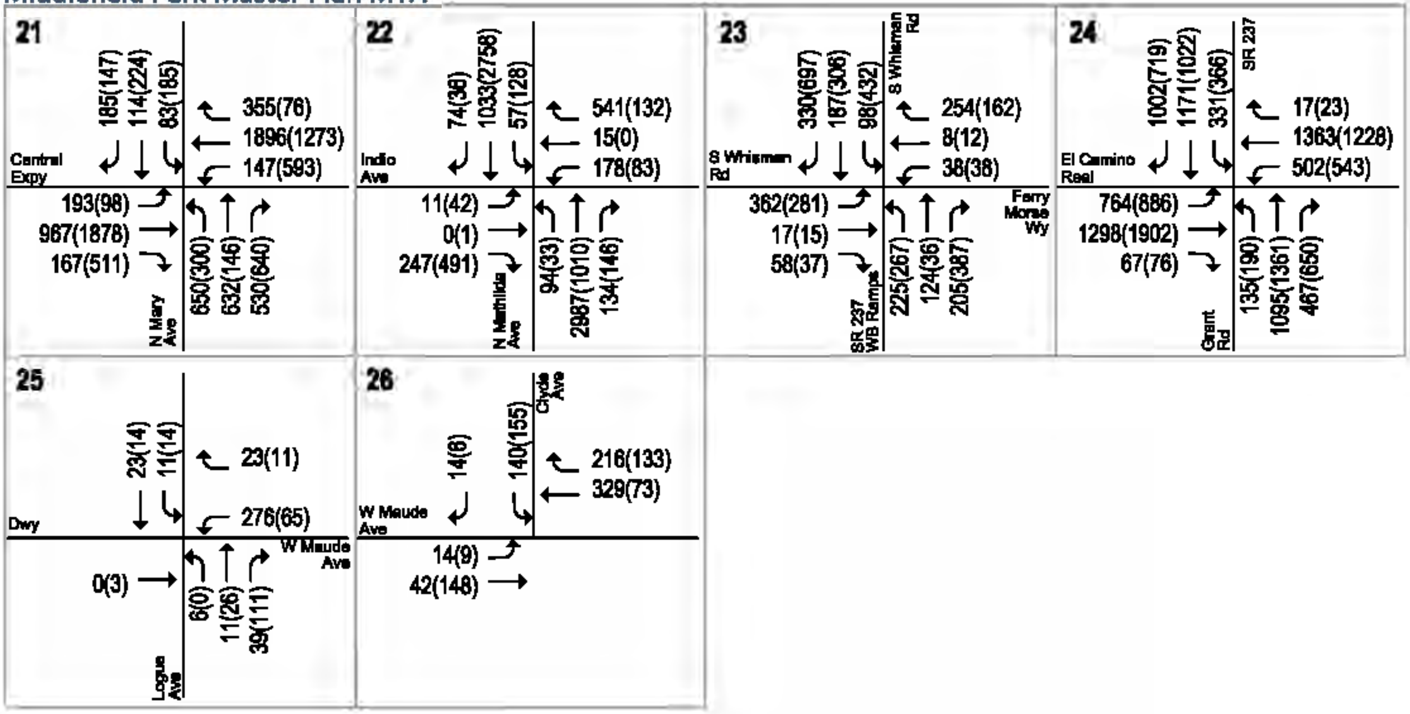


Figure 12
Background Traffic Volumes

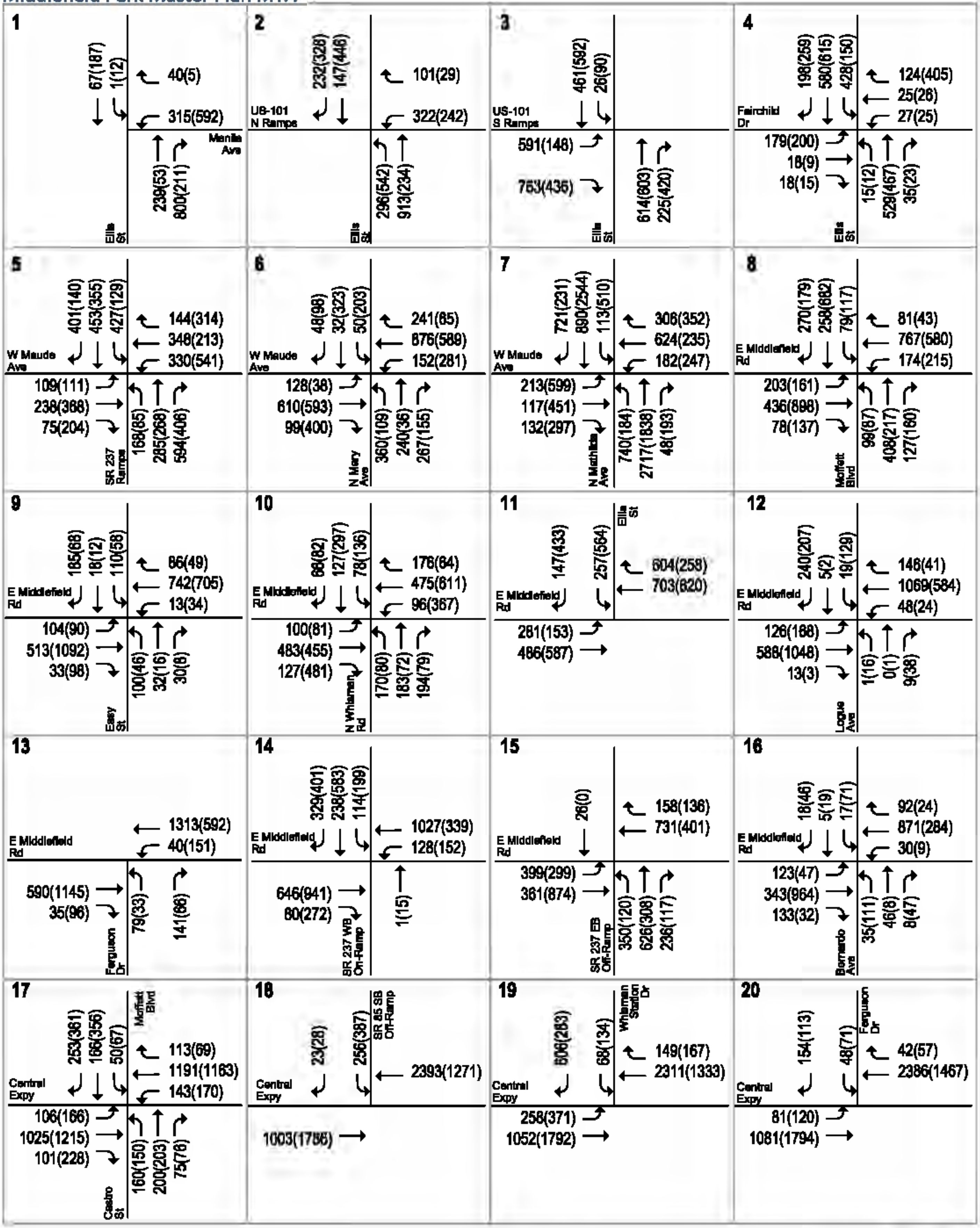


Figure 13
Background Plus Project Traffic Volumes

NORTH
Not to Scale

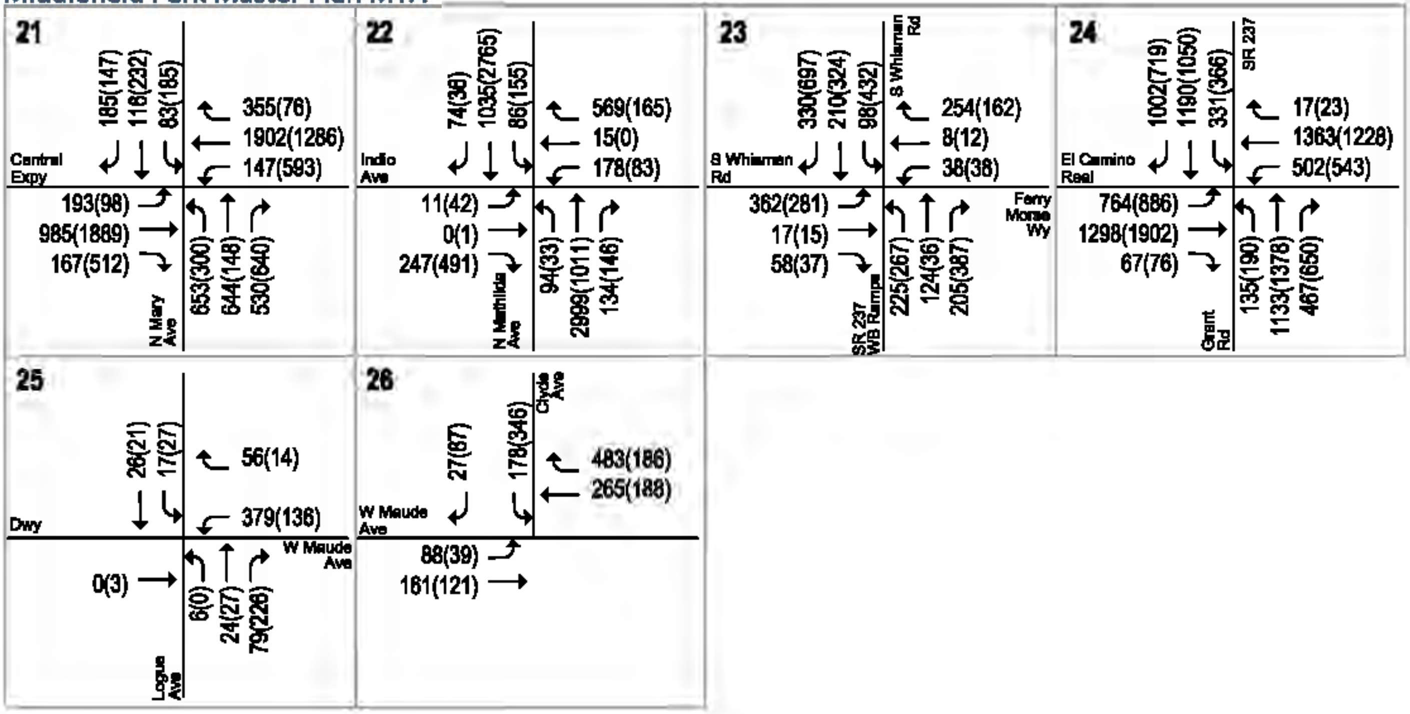


Figure 13
Background Plus Project Traffic Volumes

Intersection Levels of Service

The results of the existing plus project intersection level of service analysis are shown in Table 6. The results of the background and background plus project intersection levels of service analysis are shown in Table 7. The detailed intersection level of service calculation sheets for all study scenarios are included in Appendix C.

Background Conditions

Intersection levels of service were evaluated against the standards of the CMP and the Cities of Mountain View and Sunnyvale. The results of the intersection level of service analysis show that most study intersections would operate at acceptable levels during both the AM and PM peak hours of traffic. The Ellis Street/Manila Drive intersection would operate at LOS F during the AM peak hour, and the Grant Road/SR 237 and El Camino Real intersection would operate at LOS F during the AM and PM peak hours.

The EWPP EIR shows the Grant Road/SR 237 and El Camino Real intersection would operate at LOS E under background conditions and LOS F under cumulative conditions. However, no improvements were identified for this intersection.

Table 6
Existing Plus Project Intersection Levels of Service

ID	Intersection (Jurisdiction)	Jurisdiction	LOS Standard	Peak Hour	Existing Avg. Delay[1]	Existing LOS	Existing+Project Avg. Delay[1]	Existing+Project LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Ellis Street and Manila Drive	MV	D	AM	30.9	D	30.9	D	--	--
	(all-way stop)			PM	17.8	C	18.3	C	--	--
2	Ellis Street and US 101 NB Ramps	MV	D	AM	14.3	B	17.1	B	2.8	0.120
				PM	17.5	B	20.0	C+	2.4	0.112
3	Ellis Street and US 101 SB Ramps	MV	D	AM	16.6	B	18.5	B-	1.9	0.089
				PM	16.0	B	17.9	B	2.9	0.135
4	Ellis Street and Fairchild Drive	MV	D	AM	16.2	B	17.8	B	-0.3	0.037
				PM	16.0	B	18.9	B-	4.5	0.186
5	SR 237 Ramps and Maude Avenue	MV	D	AM	29.2	C	32.3	C-	3.7	0.087
				PM	34.3	C-	35.0	C-	-1.2	0.114
6	Mary Avenue and Maude Avenue	SV	D	AM	37.2	D+	36.6	D+	-0.4	0.024
				PM	35.5	D+	34.6	C-	-0.5	0.023
7	Mathilda Avenue and Maude Avenue*	SV/CMP	E	AM	42.4	D	43.0	D	0.6	0.007
				PM	50.8	D	52.6	D-	2.2	0.015
8	Moffett Boulevard and Middlefield Road	MV	D	AM	37.1	D+	37.3	D+	-0.1	0.008
				PM	39.1	D	39.7	D	1.0	0.020
9	Easy St and Middlefield Road	MV	D	AM	19.2	B-	19.1	B-	-0.1	0.015
				PM	11.9	B+	11.7	B+	0.0	0.016
10	Whisman Road and Middlefield Road	MV	D	AM	29.5	C	29.3	C	-0.2	0.021
				PM	31.4	C	31.8	C	0.7	0.018
11	Ellis Street and Middlefield Road	MV	D	AM	15.1	B	16.3	B	1.0	0.077
				PM	15.5	B	17.0	B	2.1	0.102
12	Logue Avenue and Middlefield Road	MV	D	AM	14.0	B	18.2	B-	5.3	0.107
				PM	16.9	B	20.6	C+	4.1	0.064
13	Ferguson Drive and Middlefield Road	MV	D	AM	10.3	B+	10.4	B+	0.0	0.024
				PM	8.8	A	9.0	A	0.4	0.030
14	SR 237 WB Ramps and Middlefield Road	MV	D	AM	18.9	B-	19.3	B-	0.4	0.020
				PM	14.9	B	15.1	B	0.2	0.033
15	SR 237 EB Ramps and Middlefield Road	MV	D	AM	24.4	C	24.4	C	0.0	0.026
				PM	18.8	B-	19.5	B-	0.7	0.020

Table 6
Existing Plus Project Intersection Levels of Service (continued)

					Existing		Existing+Project			
ID	Intersection	Jurisdiction	LOS Standard	PM AM	Avg. Delay[1]	LOS	Avg. Delay[1]	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
16	Bernardo Avenue and Middlefield Road	MV	D	AM	11.0	B+	11.1	B+	0.1	0.006
				PM	15.4	B	15.8	B	0.4	0.013
17	Moffett Boulevard and Central Expy*	SCC/CMP	E	AM	41.6	D	42.0	D	0.4	0.011
				PM	58.2	E+	59.9	E+	1.4	0.009
18	SR 85 SB Off Ramp/Central Expy	SCC	D	AM	10.8	B+	10.9	B+	0.1	0.005
				PM	13.8	B	13.8	B	0.0	0.005
19	Whisman Station Drive and Central Expy*	SCC/CMP	E	AM	25.4	C	25.9	C	0.7	0.005
				PM	10.7	B+	10.8	B+	0.3	0.006
20	Ferguson Drive and Central Expy*	SCC	D	AM	5.7	A	5.9	A	0.0	0.000
				PM	3.1	A	3.4	A	0.0	0.000
21	Mary Avenue and Central Expy*	SCC/CMP	E	AM	51.1	D-	51.1	D-	0.1	0.003
				PM	62.1	E	62.5	E	0.7	0.004
22	Mathilda Avenue and Indio Avenue	SV	E	AM	36.7	D+	38.5	D+	2.7	0.037
				PM	38.3	D+	38.7	D+	0.0	0.001
23	Whisman Road and SR 237 WB Ramps	MV	D	AM	33.8	C-	33.9	C-	0.5	0.014
				PM	35.3	D+	35.4	D+	0.0	0.000
24	Grant Road/SR 237 and El Camino Real*	Caltrans/CMP	E	AM	**102.0**	**F**	**101.6**	**F**	0.0	0.000
				PM	**94.0**	**F**	**93.8**	**F**	0.0	0.000
25	Logue Avenue and Maude Avenue	MV	D	AM	10.7	B	13.0	B	--	--
	(unsignalized)[2]			PM	10.0	B	11.1	B	--	--
26	Clyde Avenue and Maude Avenue	MV	D	AM	11.1	B	19.5	C	--	--
	(all-way stop)			PM	8.3	A	12.7	B	--	--

Notes:
* Denotes VTA CMP intersection. SCC = Santa Clara County, MV = Mountain View, SV = Sunnyvale
1. Weighted average control delay measured in seconds per vehicle.
2. Worst movement delay (seconds per vehicle) and LOS are reported for stop-controlled intersections.
Bold indicates a substandard level of service.

Table 7
Background Plus Project Intersection Levels of Service

					Background		Background+Project			
ID	Intersection	Jurisdiction	LOS Standard	Peak Hour	Avg. Delay[1]	LOS	Avg. Delay[1]	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Ellis Street and Manila Drive	MV	D	AM	**54.4**	**F**	**54.2**	**F**	--	--
	(all-way stop)			PM	23.4	C	24.3	C	--	--
2	Ellis Street and US 101 NB Ramps	MV	D	AM	15.1	B	18.5	B-	3.7	0.125
				PM	19.6	B-	23.4	C	4.0	0.122
3	Ellis Street and US 101 SB Ramps	MV	D	AM	18.2	B-	22.5	C+	4.2	0.110
				PM	15.6	B	17.8	B	2.1	0.153
4	Ellis Street and Fairchild Drive	MV	D	AM	16.7	B	19.3	B-	7.5	0.149
				PM	17.6	B	20.7	C+	5.6	0.185
5	SR 237 Ramps and Maude Avenue	MV	D	AM	34.4	C-	39.2	D	6.6	0.061
				PM	34.5	C-	36.6	D+	1.6	0.079
6	Mary Avenue and Maude Avenue	SV	D	AM	37.3	D+	36.9	D+	-0.5	0.018
				PM	36.0	D+	35.4	D+	-0.3	0.025
7	Mathilda Avenue and Maude Avenue*	SV/CMP	E	AM	54.1	D-	56.1	E+	4.7	0.021
				PM	62.7	E	63.6	E	-1.0	-0.004
8	Moffett Boulevard and Middlefield Road	MV	D	AM	37.9	D+	38.1	D+	0.0	0.008
				PM	39.7	D	40.1	D	0.8	0.013
9	Easy St and Middlefield Road	MV	D	AM	18.9	B-	18.7	B-	0.0	0.011
				PM	11.7	B+	11.5	B+	-0.1	0.008
10	Whisman Road and Middlefield Road	MV	D	AM	29.1	C	29.0	C	-0.2	0.021
				PM	31.9	C	32.5	C-	0.6	0.017
11	Ellis Street and Middlefield Road	MV	D	AM	15.3	B	16.9	B	1.5	0.078
				PM	15.6	B	17.3	B	2.4	0.102
12	Logue Avenue and Middlefield Road	MV	D	AM	13.9	B	18.1	B-	5.4	0.107
				PM	16.3	B	20.3	C+	3.7	0.051
13	Ferguson Drive and Middlefield Road	MV	D	AM	10.1	B+	10.0	A	0.1	0.024
				PM	8.7	A	8.8	A	0.4	0.022
14	SR 237 WB Ramps and Middlefield Road	MV	D	AM	19.1	B-	19.5	B-	0.5	0.020
				PM	16.2	B	16.6	B	0.4	0.035
15	SR 237 EB Ramps and Middlefield Road	MV	D	AM	25.5	C	25.5	C	0.0	0.026
				PM	19.5	B-	20.2	C+	0.6	0.019

Table 7
Background Plus Project Intersection Levels of Service (continued)

ID	Intersection	Jurisdiction	LOS Standard	AM PM	Background Avg. Delay[1]	Background LOS	Background+Project Avg. Delay[1]	Background+Project LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
16	Bernardo Avenue and Middlefield Road	MV	D	AM	12.9	B	12.9	B	0.0	0.006
				PM	16.4	B	16.7	B	0.4	0.005
17	Moffett Boulevard and Central Expy*	SCC/CMP	E	AM	42.4	D	42.8	D	0.4	0.011
				PM	63.4	E	65.6	E	1.9	0.009
18	SR 85 SB Off Ramp/Central Expy	SCC	D	AM	10.8	B+	10.9	B+	0.1	0.005
				PM	13.8	B	13.8	B	0.0	0.005
19	Whisman Station Drive and Central Expy*	SCC/CMP	E	AM	25.3	C	25.8	C	0.7	0.005
				PM	10.9	B+	11.0	B+	0.3	0.006
20	Ferguson Drive and Central Expy*	SCC	D	AM	4.8	A	5.0	A	0.0	0.000
				PM	3.1	A	3.4	A	0.0	0.000
21	Mary Avenue and Central Expy*	SCC/CMP	E	AM	52.4	D-	52.4	D-	0.1	0.003
				PM	65.9	E	66.4	E	0.9	0.004
22	Mathilda Avenue and Indio Avenue	SV	E	AM	52.1	D-	58.6	E+	10.3	0.037
				PM	41.9	D	43.7	D	1.5	0.010
23	Whisman Road and SR 237 WB Ramps	MV	D	AM	33.8	C-	33.9	C-	0.5	0.014
				PM	35.3	D+	35.3	D+	-0.1	-0.001
24	Grant Road/SR 237 and El Camino Real*	Caltrans/CMP	E	AM	**102.9**	**F**	**102.5**	**F**	0.0	0.000
				PM	**95.8**	**F**	**94.4**	**F**	-1.9	-0.005
25	Logue Avenue and Maude Avenue	MV	D	AM	10.8	B	13.2	B	--	--
	(unsignalized)[2]			PM	10.1	A	11.2	B	--	--
26	Clyde Avenue and Maude Avenue	MV	D	AM	12.6	B	28.4	D	--	--
	(all-way stop)			PM	8.7	A	14.3	B	--	--

Notes:
* Denotes VTA CMP intersection. SCC = Santa Clara County, MV = Mountain View, SV = Sunnyvale
1. Weighted average control delay measured in seconds per vehicle.
2. Worst movement delay (seconds per vehicle) and LOS are reported for stop-controlled intersections.
Bold indicates a substandard level of service.

Project Conditions

The results of the analysis show that the added project trips would not cause an adverse operational effect at any of the signalized study intersections under existing and background conditions.

The Ellis Street/Manila Drive intersection is a T-intersection and is stop controlled on all approaches. Under background conditions, the intersection is estimated to operate at an unacceptable level of service (LOS F) during the AM peak hour. The added project trips would slightly increase the average delay for the intersection but is not expected to cause a noticeable effect on traffic operations at this intersection. The peak-hour volume signal warrant analysis described below indicates that both the AM and PM peak-hour volumes at the intersection would meet the peak-hour signal warrant under both existing and background conditions. To address the deficiency, the EWPP EIR recommends signalizing the intersection with a protected left turn lane and shared through/right lane for each approach. Thus, the project should contribute to the improvement identified by the EWPP. The project may be able to contribute to the improvement identified by paying the EWPP Development Impact Fee, if adopted.

There are several signalized intersections for which the average delay under project conditions is shown to be less than under no project conditions during at least one peak hour. The decrease in average delay can be less under project conditions because the intersection delay is a weighted average of all intersection movements. The addition of project traffic to movements with delays lower than the average intersection delay can reduce the average delay for the entire intersection. There are also several signalized intersections at which there would be no increase in critical delay and/or critical v/c compared to existing and background conditions. This is because the project trips are assigned to the non-critical movements of these intersections.

Signal Warrant Analysis At Unsignalized Intersections

Traffic operations at the unsignalized intersections were also analyzed on the basis of the Peak-Hour Volume Signal Warrant, (Warrant #3) described in *the California Manual on Uniform Traffic Control Devices (MUTCD)*, 2014 Edition. This method makes no evaluation of intersection level of service, but simply provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. The results of peak-hour volume signal warrant analysis (see Table 8) indicate that the Ellis Street/Manila Drive intersection would meet the thresholds that warrant signalization under both existing and background conditions during both AM and PM peak hours. The Logue Avenue/Maude Avenue intersection would not meet the warrant analysis under any condition. The Clyde Avenue/Maude Avenue intersection would meet the warrant analysis under the background plus project conditions for both the AM and PM peak hours. However, because the intersection would operate at an acceptable LOS D under background plus project conditions, installation of a traffic signal is not recommended for the intersection. The peak-hour signal warrant sheet is contained in Appendix E.

Table 8
Signal Warrant Analysis Summary

	Signal Warrant Met[1]			
Intersection	Existing	Existing Plus Project	Background	Background Plus Project
Ellis Street & Manila Street	Yes	Yes	Yes	Yes
Logue Avenue & Maude Avenue	No	No	No	No
Clyde Avenue & Maude Avenue	No	No	No	Yes

Notes:

1. Based on the California Manual on Uniform Traffic Control Devices for Streets and Highways, Warrant 3 - Peak Hour

Intersection Control at Clyde Avenue and Maude Avenue

The Clyde Avenue/Maude Avenue intersection is all-way stop controlled. The peak-hour volume under the background plus project scenario would warrant a traffic signal. However, the intersection would operate adequately without a signal.

To further evaluate the need for a traffic signal at the Clyde Avenue/Maude Avenue intersection, the Eight-Hour Vehicular Volume Warrant (Warrant #1) and the Pedestrian Volume Warrant (Warrant #4) were checked. The warrant sheet is contained in Appendix E. The 8-hour vehicular volume warrant would not be met because the traffic volume for four of the highest 8 hours is less than the minimum thresholds for a traffic signal. Based on the peak period pedestrian volume estimated by the applicant for the MPMP, there would be up to 100 pedestrians during the 3-4 hour peak period, which is much lower than the minimum threshold (100 pedestrians per hour) of the pedestrian volume warrant. Therefore, based on the 8-hour volume and pedestrian volume warrants, the intersection would not warrant a traffic signal.

As an alternative, a roundabout was also evaluated for the Maude Avenue/Clyde Avenue intersection. A standard single lane roundabout typically requires 110 feet in diameter and a mini roundabout requires 80 feet in diameter. The intersection is approximately 70 feet wide in the east-west direction. However, in the north-south direction, the intersection is approximately 50 feet wide. Because the intersection comprises an arterial and collector street, a standard roundabout would be appropriate. To accommodate the roundabout would require taking approximately 20 to 30 feet from the adjacent properties at Building R6, Building R5, as well as the property at the northeast corner of Clyde Avenue/Maude Avenue, for right-of-way use. With the roundabout, the intersection would operate similarly or better than the existing all-way stop. With the all-way stop, the maximum westbound vehicle queue on Maude Avenue is estimated to extend to the signal at SR 237 during the AM peak hour under background plus project conditions. With the roundabout, the westbound vehicle queue is expected to be shorter and would not extend to the signal at SR 237. It should be noted that the roundabout may be challenging to accommodate since the project does not include redevelopment of the property at the northeast corner of Clyde Avenue/Maude Avenue and it would alter the project significantly, resulting in fewer residential units (Buildings R5 and R6) – particularly affordable units - and a reduction in the size of public parks (Maude and Gateway Parks). Due to right-of-way constraints and loss of residential units and park space, the roundabout is not recommended.

Stop Warrant Analysis At Logue Avenue and Maude Avenue

A potential all-way stop at the Logue Avenue and Maude Avenue intersection was evaluated under existing, background, and background plus project conditions, based on the criteria described in the City's stop warrant analysis worksheet. The criteria include:

I. **Volume Warrant:** The vehicular volume entering the intersection from all approaches is at least 300 vehicles per hour for the highest 8 hours of an average day, AND the combined vehicular volume entering the intersection from the minor street approaches is at least 100 vehicles per hour for the same 8 hours.

   OR

   The vehicular volume entering the intersection from all approaches is at least 300 vehicles per hour for the highest 8 hours of an average day, AND the total pedestrian volume entering the intersection is at least 100 pedestrians per hour for the same 8 hours.

   If the intersection is located in a residential area, the above volume thresholds are decreased by 40%.

II. **Crash Warrant:** 3 or more reported crashes/collisions in a 12-month period.

III. **Line of Sight Warrant:** 150 feet or less line of sight distance on one or more approaches of the major street.

An intersection qualifies as a residential area if ALL of the following conditions exist:

- Both streets have residential frontage and have a 25 mph speed limit.
- Neither street is an adopted through street as defined in the CVC.
- Neither street has more than one travel lane in each direction.
- No stop sign or traffic signal exists within 500 feet along the major street.
- The installation of a 4-way stop sign is compatible with overall traffic circulation.

The Logue Avenue/Maude Avenue intersection does not qualify as a residential area because both streets do not have a residential frontage, even though some residential is anticipated along both streets (400 Logue Avenue and the project Building R3).

Based on the City's stop warrant criteria, the intersection would not meet any of the three warrants under any scenario. The stop warrant analysis worksheets are included in Appendix E.

Intersection Vehicle Queuing

The analysis of intersection operations was supplemented with a vehicle queuing analysis for intersections where the project would add a substantial number of trips to the left-turn movements. This analysis provides a basis for estimating future storage requirements at the intersections under existing, background, and background plus project conditions. Vehicle queues were estimated using the Poisson method, described in Chapter 1. The following left-turn movements were evaluated, and the results of the queueing analysis are summarized in Table 9:

- Ellis Street and Fairchild Drive: southbound left turn
- SR 237 Ramps and Maude Avenue: northbound and eastbound left turns
- Mary Avenue and Maude Avenue: northbound left turn
- Mathilda Avenue and Maude Avenue: northbound left turn
- Whisman Road and Middlefield Road: southbound and westbound left turns
- Ellis Street and Middlefield Road: southbound and eastbound left turns
- Logue Avenue and Middlefield Road: eastbound left turn
- Ferguson Drive and Middlefield Road: northbound and westbound left turns
- SR 237 Eastbound Ramps and Middlefield Road: northbound left turn
- Ferguson Drive and Central Expressway: eastbound left turn
- Moffett Boulevard and Middlefield Road: westbound left turn
- Mathilda Avenue and Indio Avenue: southbound left turn
- Logue Avenue and Maude Avenue: westbound movement
- Clyde Avenue and Maude Avenue: southbound and eastbound movements

The queuing analysis indicates that under background plus project conditions, the 95th percentile left-turn vehicle queue at the following movements and peak hours would exceed the storage capacity due to the project. The vehicle queuing calculations are included in Appendix F.

- Ellis Street and Fairchild Drive: southbound left turn (AM peak hour)
- Mathilda Avenue and Maude Avenue: northbound left turn (AM peak hour)
- Whisman Road and Middlefield Road: westbound left turn (PM peak hour)
- Ellis Street and Middlefield Road: eastbound left turn (AM and PM peak hours)
- Logue Avenue and Middlefield Road: eastbound left turn (PM peak hour)
- Clyde Avenue and Maude Avenue: southbound movement (PM peak hour)

The queuing analyses for these movements are discussed below. The project trips would not cause the estimated maximum vehicle queue to exceed the storage capacity at other movements or peak hours.

Southbound Left Turn at Ellis Street and Fairchild Drive

The southbound left-turn lane on Ellis Street at Fairchild Drive provides approximately 175 feet of vehicle storage, which can accommodate about seven vehicles. The 95th percentile queue currently extends past the storage lane by one vehicle during the AM peak hour. Under background conditions, the queue would exceed the storage length by three vehicles. The project would increase the 95th percentile queue by three vehicles under background plus project conditions, causing the 95th percentile vehicle queue to exceed the storage capacity by six vehicles in the AM peak hour.

The EWPP EIR analyzed the Ellis Street corridor at the US 101 interchange. The EIR identified that during the AM peak hour, the southbound queue at Fairchild Drive would extend to the US 101 southbound ramp intersection and cause extensive queuing and vehicle delays on the southbound off ramp. However, the EIR indicates that due to right-of-way and funding constraints, there are no feasible improvements to improve operations and vehicle queuing along Ellis Street at the interchange.

Table 9
Queuing Analysis Summary

Analysis Scenario	Ellis Street & Fairchild		SR 237 Ramps & Maude Avenue				Mary Avenue & Maude Avenue		Mathilda Avenue & Maude Avenue		SR 237 EB Ramps & Middlefield Road	
	SBL		NBL		EBL		NBL		NBL		NBL	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing												
Cycle/Delay[1] (sec)	70	70	100	110	100	110	150	130	160	160	95	100
Volume (vph)	224	88	97	37	40	76	345	104	613	134	275	86
Number of lanes	1	1	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	224	88	97	37	40	76	173	52	307	67	138	43
95th %. Queue (veh/ln)	8	4	6	3	3	5	12	4	20	6	7	3
95th %. Queue[2] (ft/ln)	200	100	150	75	75	125	300	100	500	150	175	75
Storage (ft/ln)	175	175	225	225	175	175	250	250	450	450	250	250
Adequate (Y/N)	**N**	Y	Y	Y	Y	Y	**N**	Y	**N**	Y	Y	Y
Background												
Cycle/Delay[1] (sec)	70	70	100	110	100	110	150	130	160	160	95	100
Volume (vph)	310	103	97	37	40	76	346	104	700	150	335	97
Number of lanes	1	1	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	310	103	97	37	40	76	173	52	350	75	168	49
95th %. Queue (veh/ln)	10	5	6	3	3	5	12	4	22	7	8	3
95th %. Queue[2] (ft/ln)	250	125	150	75	75	125	300	100	550	175	200	75
Storage (ft/ln)	175	175	225	225	175	175	250	250	450	450	250	250
Adequate (Y/N)	**N**	Y	Y	Y	Y	Y	**N**	Y	**N**	Y	Y	Y
Background Plus Project												
Cycle/Delay[1] (sec)	70	70	100	110	100	110	150	130	160	160	95	100
Volume (vph)	428	150	168	85	109	111	360	109	740	184	350	120
Number of lanes	1	1	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	428	150	168	85	109	111	180	55	370	92	175	60
95th %. Queue (veh/ln)	13	6	8	5	6	7	12	4	23	8	8	4
95th %. Queue[2] (ft/ln)	325	150	200	125	150	175	300	100	575	200	200	100
Storage (ft/ln)	175	175	225	225	175	175	250	250	450	450	250	250
Adequate (Y/N)	**N**	Y	Y	Y	Y	Y	**N**	Y	**N**	Y	Y	Y

Notes:
NB = northbound; SB = southbound; WB = westbound; EB = eastbound; L = left-turn; T = through; R = right turn
[1] Cycle length used for signalized intersections, delay of movement used for unsignalized intersections
[2] Assumes 25 feet per vehicle queued.
[3] Storage length measured from intersection to nearest driveway.

Table 9
Queuing Analysis Summary (continued)

Analysis Scenario	Whisman Road & Middlefield Road				Ellis Street & Middlefield Road				Logue Avenue & Middlefield		Ferguson Drive & Middlefield Road			
	SBL		WBL		SBL[3]		EBL		EBL		NBL		WBL	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing														
Cycle/Delay[1] (sec)	100	100	100	100	70	65	70	65	85	105	70	70	70	70
Volume (vph)	61	51	65	337	160	419	256	108	85	49	61	18	35	138
Number of lanes	1	1	1	1	2	2	1	1	1	1	1	1	2	2
Volume (vphpl)	61	51	65	337	80	210	256	108	85	49	61	18	18	69
95th %. Queue (veh/ln)	4	4	4	15	4	7	9	4	5	4	3	1	1	3
95th %. Queue[2] (ft/ln)	100	100	100	375	100	175	225	100	125	100	75	25	25	75
Storage (ft/ln)	125	125	275	275	250	250	125	125	200	200	125	125	175	175
Adequate (Y/N)	Y	Y	Y	**N**	Y	Y	**N**	Y	Y	Y	Y	Y	Y	Y
Background														
Cycle/Delay[1] (sec)	100	100	100	100	70	65	70	65	85	105	70	70	70	70
Volume (vph)	73	126	65	340	202	454	263	110	89	61	61	18	36	139
Number of lanes	1	1	1	1	2	2	1	1	1	1	1	1	2	2
Volume (vphpl)	73	126	65	340	101	227	263	110	89	61	61	18	18	70
95th %. Queue (veh/ln)	5	7	4	15	4	7	9	5	5	4	3	1	1	3
95th %. Queue[2] (ft/ln)	125	175	100	375	100	175	225	125	125	100	75	25	25	75
Storage (ft/ln)	125	125	275	275	250	250	125	125	200	200	125	125	175	175
Adequate (Y/N)	Y	**N**	Y	**N**	Y	Y	**N**	Y	Y	Y	Y	Y	Y	Y
Background Plus Project														
Cycle/Delay[1] (sec)	100	100	100	100	70	65	70	65	85	105	70	70	70	70
Volume (vph)	78	136	96	367	257	564	281	153	126	168	79	33	40	151
Number of lanes	1	1	1	1	2	2	1	1	1	1	1	1	2	2
Volume (vphpl)	78	136	96	367	129	282	281	153	126	168	79	33	20	76
95th %. Queue (veh/ln)	5	7	6	16	4	7	10	6	6	9	4	2	2	4
95th %. Queue[2] (ft/ln)	125	175	150	400	100	175	250	150	150	225	100	50	50	100
Storage (ft/ln)	125	125	275	275	250	250	125	125	200	200	125	125	175	175
Adequate (Y/N)	Y	**N**	Y	**N**	Y	Y	**N**	**N**	Y	**N**	Y	Y	Y	Y

Notes:
NB = northbound; SB = southbound; WB = westbound; EB = eastbound; L = left-turn; T = through; R = right turn
[1] Cycle length used for signalized intersections, delay of movement used for unsignalized intersections
[2] Assumes 25 feet per vehicle queued.
[3] Storage length measured from intersection to nearest driveway.

Table 9
Queuing Analysis Summary (continued)

	Ferguson Drive & Central Expy		Moffett Boulevard & Middlefield Road		Mathilda Avenue & Indio Avenue		Logue Avenue & Maude Avenue		Clyde Avenue & Maude Avenue			
	EBL		WBL		SBL		WBL/T/R[3]		SBL/R[3]		EBL/T[3]	
Analysis Scenario	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing												
Cycle/Delay[1] (sec)	89	90	120	120	160	160	10.7	9.5	8.6	8.7	7.9	8.3
Volume (vph)	65	109	141	168	22	39	287	74	68	146	54	146
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	65	109	141	168	22	39	287	74	68	146	54	146
95th %. Queue (veh/ln)	4	6	9	10	3	4	3	1	1	1	1	1
95th %. Queue[2] (ft/ln)	100	150	225	250	75	100	75	25	25	25	25	25
Storage (ft/ln)	175	175	300	300	325	325	100	100	75	75	75	75
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Background												
Cycle/Delay[1] (sec)	89	90	120	120	160	160	10.8	9.6	9.8	9.1	8.3	8.6
Volume (vph)	65	109	142	169	57	128	299	76	154	161	56	157
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	65	109	142	169	57	128	299	76	154	161	56	157
95th %. Queue (veh/ln)	4	6	9	10	5	10	3	1	2	2	1	2
95th %. Queue[2] (ft/ln)	100	150	225	250	125	250	75	25	50	50	25	50
Storage (ft/ln)	175	175	300	300	325	325	100	100	75	75	75	75
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project												
Cycle/Delay[1] (sec)	89	90	120	120	160	160	13.2	11.1	12.1	16.6	11.6	10.5
Volume (vph)	81	120	143	170	86	155	435	150	205	433	249	160
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	81	120	143	170	86	155	435	150	205	433	249	160
95th %. Queue (veh/ln)	5	6	9	10	7	11	4	2	2	5	2	2
95th %. Queue[2] (ft/ln)	125	150	225	250	175	275	100	50	50	125	50	50
Storage (ft/ln)	175	175	300	300	325	325	100	100	75	75	75	75
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	**N**	Y	Y

Notes:
NB = northbound; SB = southbound; WB = westbound; EB = eastbound; L = left-turn; T = through; R = right turn
[1] Cycle length used for signalized intersections, delay of movement used for unsignalized intersections
[2] Assumes 25 feet per vehicle queued.
[3] Storage length measured from intersection to nearest driveway.

Northbound Left Turn at Mathilda Avenue and Maude Avenue

The northbound left-turn lanes on Mathilda Avenue at Maude Avenue provide approximately 450 feet of vehicle storage per lane within two lanes, which can accommodate about 18 vehicles per lane. The 95th percentile vehicle queue would exceed the storage capacity by two vehicles in the AM peak hour under existing conditions and four vehicles under background conditions. The project would increase the 95th percentile queue by one vehicle under background plus project conditions, causing the 95th percentile vehicle queue to exceed the storage capacity by five vehicles per lane in the AM peak hour. The northbound left turn pockets could be extended by modifying the landscaped median to accommodate the extra 10 vehicles. However, the northbound traffic has three through lanes to travel through the intersection. Thus, the spillback is not expected to affect the northbound through traffic at the intersection.

Westbound Left Turn at Whisman Road and Middlefield Road

The westbound left-turn lane on Middlefield Road at Whisman Road provides approximately 275 feet of vehicle storage, which can accommodate about 11 vehicles. The 95th percentile queue currently extends past the storage lane by four vehicles during the PM peak hour. Under background conditions, the queue would not increase. The project would increase the 95th percentile queue by one vehicle under background plus project conditions, causing the 95th percentile vehicle queue to exceed the storage capacity by five vehicles in the PM peak hour. The westbound left turn pocket could be extended to 200 feet by modifying the landscaped median. However, the westbound through movement has two lanes to travel through the intersection. Thus, the 95th percentile queue briefly extending to the inside through lane is not expected to adversely affect the westbound traffic flow.

Eastbound Left Turn at Ellis Street and Middlefield Road

The eastbound left-turn lane on Middlefield Road at Ellis Street provides approximately 125 feet of vehicle storage, which can accommodate about five vehicles. The 95th percentile queue currently extends past the storage lane by four vehicles during the AM peak hour. During the PM peak hour, the queue is accommodated within the storage lane with four vehicles. Under background conditions, the queue would not increase during the AM peak hour and would increase by one vehicle during the PM peak hour. The project would increase the 95th percentile queue by one vehicle under background plus project conditions, causing the 95th percentile vehicle queue to exceed the storage capacity by five vehicles in the AM peak hour and one vehicle in the PM peak hour. In the AM peak hour, the 95th percentile vehicle queue would extend to the median opening for the westbound midblock left turn into the driveway at 487 E. Middlefield Road.

The EWPP EIR identifies the need for an improvement at this intersection, specifically along the eastbound direction to improve queuing. The EIR recommends adding an eastbound left-turn lane with overlap signal phasing. The existing right-of-way of 80 feet could fit two 8-foot bike lanes, two 10-foot left turn lanes, and four 11-foot through lanes. The project may be able to contribute to the improvement identified by paying an EWPP Development Impact Fee, if adopted.

Eastbound Left Turn at Logue Avenue and Middlefield Road

The eastbound left-turn lane on Middlefield Road at Logue Avenue provides approximately 200 feet of vehicle storage, which can accommodate about eight vehicles. The 95th percentile queue is accommodated during the AM and PM peak hours under existing and background conditions. The project would increase the 95th percentile queue to 225 feet during the PM peak hour, which would extend past the storage lane by one vehicle. The small increase in queue length is not expected to cause a noticeable effect on the eastbound traffic operations because the left-turn spillback would last for a short period of time during the PM peak hour. The extended queue is not expected to create any conflicts with the VTA rail safety operations as there are gate arms at the rail to prevent vehicles from approaching the crossing. However, to minimize the possibility of the eastbound vehicle queue extending to the LRT tracks, a signal should be installed for the midblock crossing B at the LRT tracks with preemptive signals that are interconnected and coordinated with the signal at Logue Avenue and Middlefield Road. A separate queuing analysis should be conducted to confirm traffic signal coordination/operations.

Southbound Movement at Clyde Avenue and Maude Avenue

The southbound lane on Clyde Avenue at Maude Avenue provides approximately 75 feet of vehicle storage to the nearest driveway, which can accommodate about three vehicles. The 95th percentile queue is accommodated during the AM and PM peak hours under existing and background conditions. The project would increase the 95th percentile queue to 125 feet during the PM peak hour, which would extend past the nearest driveway by two vehicles. The small increase in queue length is not expected to substantially increase the delay for vehicles accessing the driveway because the left-turn spillback would last for a short period of time during the PM peak hour.

Freeway Ramp Traffic Operations

A freeway ramp operations analysis was performed to identify the effects of project traffic on the vehicle queues at the metered on-ramp and the signal-controlled off-ramp during the AM and PM peak hours of traffic. Ramp operations at the study ramps were based on the operational assessment prepared for EWPP EIR. It should be noted that the evaluation of freeway ramps is not required based on the VTA's TIA Guidelines, nor are there adopted methodologies or adverse effect criteria for the analysis of freeway ramps.

The US 101/Ellis Street interchange provides direct access to US 101 from the plan area. The SR 237/Maude Avenue interchange provides direct access to SR 237 East, and the SR 237/Middlefield Road interchange provides direct access to SR 237 West. The US 101 southbound on-ramp from Ellis Street is metered in the PM commute hours. The SR 237 on-ramps are not metered at either location. Therefore, the SR 237 ramp operations were only evaluated for the off-ramps.

US 101/Ellis Street Ramps

The EWPP EIR evaluated the operation of the US 101/Ellis Street interchange using a VISSIM micro simulation model evaluating the Ellis Street corridor between Manila Drive and Fairchild Drive. The model was calibrated using the vehicular/pedestrian/bicycle traffic volumes, intersection signal timings, and light rail service levels to replicate the operations observed in the field. The model results showed that during the AM peak hour, due to the southbound queue at Fairchild Drive and the northbound queue at the US 101 Northbound Ramp extending to the US 101 Southbound Ramp intersection under project conditions, the northbound and southbound off ramp queues are expected to frequently extend to the end of the ramps, which could negatively affect freeway operations. During the PM peak hour, the US 101 southbound on-ramp is expected to be fully queued and spilling back onto Ellis Street, blocking the Fairchild Drive intersection. The US 101 northbound off-ramp queue is expected to extend to the end of the ramp, due to the limited operational capacity of the westbound left-turn at the end of the ramp.

The project would add 92 and 137 trips to the US 101 southbound off-ramp during the AM and PM peak hours, respectively, and 79 and 52 trips to the US 101 northbound off-ramp during the AM and PM peak hours, respectively. The project would add 96 new PM peak-hour trips to the metered US 101 southbound on-ramp. The project trips would contribute to the ramp operational/queueing issues identified in the EWPP EIR. However, due to right-of-way and funding constraints, the EIR indicates that there are no feasible improvements to address operational and queuing issues at the interchange.

SR 237/Middlefield Road Eastbound Off-Ramps

The project would add 84 and 65 trips during the AM and PM peak hours, respectively, to the eastbound off-ramp at Middlefield Road. During the AM peak hour, 15 vehicles are expected to make a left turn onto

Middlefield Road, and 69 vehicles are expected to continue through to the Maude Avenue intersection. During the PM peak hour, 23 vehicles are expected to make a left turn onto Middlefield Road, and 42 vehicles are expected to continue through to the Maude Avenue intersection.

As shown in Table 9, the added 15 and 23 northbound left-turn trips during the AM and PM peak hours, respectively, would be within the storage lanes. The vehicle queues for the through traffic would also be contained within the off-ramps.

SR 237/Maude Avenue Off-Ramps

The project would add 65 and 70 trips to the SR 237 westbound off-ramp at Maude Avenue during the AM and PM peak hours, respectively. The added trips to the westbound off-ramp would make a right turn onto Maude Avenue. Right turn vehicles may make right turns on the red, green, and right turn green signal. Thus, the project is not expected to extend the off-ramp queue to the end of the ramp.

The added 69 and 42 northbound left-turn trips during the AM and PM peak hours, respectively, would not extend the queue past the storage lane, as shown in Table 9.

Therefore, the project trips would not cause operational or queueing issues at the SR 237/Middlefield Road and SR 237/Maude Avenue interchanges.

Midblock Pedestrian Crossings

The project proposes, or recommends, midblock crossings in the following locations, as shown on Figure 14, with Rectangular Rapid Flash Beacons (RRFB) or pedestrian signals:

A. Ellis Street north of Building O1
B. Middlefield Road west of the LRT tracks
C. Logue Avenue north of Building R3
D. Clyde Avenue south of Buildings O4 and O5/P1
E. Clyde Avenue north of Building R5

The midblock crosswalks A, C, D and E would be installed at the proposed Class I bicycle and pedestrian path/trail that would extend from Ellis Street north of Building O1, through Logue Avenue and Maude Park, to Clyde Avenue.

To determine the type of treatment necessary for each crossing, the *Guidelines for Pedestrian Crossing Treatments* included in the National Cooperative Highway Research Program (NCHRP) Report 562, *Improving Pedestrian Safety at Unsignalized Crossings*, was used for the assessment. The Guidelines include a worksheet to determine the type of treatment necessary. The worksheet first determines whether a traffic signal would be warranted at a crossing based on the major road vehicle volume and peak-hour pedestrian volume, based on the Pedestrian Volume Warrant (Warrant 4) in the MUTCD. The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. The major street vehicle volume was used to determine the minimum peak-hour pedestrian volume that would warrant a traffic signal. If the peak-hour pedestrian volume is greater than the minimum volume, a traffic signal should be considered if not within 300 feet of another traffic signal. The traffic control signal for midblock crossings should be installed at least 100 feet from side streets or driveways that are controlled by stop or yield signs. Note that this is just one tool used to evaluate whether installation of a traffic signal would be justified. Additional engineering analysis is recommended based on the actual pedestrian volumes and/or field observations of pedestrian delay gaps in roadway traffic flow to be conducted at the appropriate construction phase of the project.

If a traffic signal is not warranted, other types of treatments are determined based on pedestrian delay at the crossing. The pedestrian delay was determined using the pedestrian crossing distance, walking speed, and start up and end clearance time. Table 10 summarizes the recommended treatments and the assumptions for each proposed crossing. The midblock pedestrian crossing worksheets are contained in Appendix F. The recommended treatment and improvements for each proposed crossing are also shown in Figure 14.

Table 10
Pedestrian Midblock Crossing Treatment Summary

Location	Meets Signal Warrant (Y/N)[1]	Treatment Category[2]	Assumption
A. Ellis Street north of O1	Y	Traffic Signal	Pedestrian crossing volume per hour is equal to or greater than 105 pedestrians per hour
B. Middlefield Road west of LRT tracks	N	Traffic Signal[3]	Proximity of LRT tracks and safety
C. Logue Avenue north of R3	Y	Traffic Signal	Pedestrian crossing volume per hour is equal to or greater than 862 pedestrians per hour
D. Clyde Avenue south of O4 & O5/P1	Y	Traffic Signal	Pedestrian crossing volume per hour is equal to or greater than 387 pedestrians per hour
E. Clyde Avenue north of R5	N	Active or Enhanced	Fewer than 364 pedestrians per hour

Notes:
1. The signal warrant is determined based on the Pedestrian Volume Warrant (Warrant 4) in the MUTCD. The peak-hour pedestrian volume was estimated based on the pedestrian flow model, provided by Google for the MPMP. The warrant is based on the background plus project volumes.
2. The NCHRP describes treatment categories as Red, Active or Enhanced, and Crosswalk. Traffic signals are warranted by the pedestrian volume warrant.
3. A red signal or HAWK beacon be warranted for the pedestrian volume up to 460. However, due to the proximity of LRT tracks, for operational coordination and safety, a traffic signal is recommended..

In combination with providing adequate lighting in the public right-of-way for crossings, the treatment categories are as follows:

- **Crosswalk:** standard crosswalk markings and pedestrian crossing signs with new street lighting.
- **Enhanced and/or high visibility:** crosswalk with devices and design treatments that enhance both the ability of pedestrians to cross the street and the visibility of the crossing location and pedestrians waiting to cross. Warning signs, markings, or beacons are present or active at the crossing location at all times. Examples include in-street pedestrian crossing signs, high-visibility signs and markings, raised crosswalk, and median refuge islands.
- **Active when present:** crosswalk with devices designed to display a warning only when pedestrians are present or crossing the street. Examples include flashing amber beacons (RRFB), and pedestrian crossing flags.
- **Red signal or beacon (HAWK signal):** crosswalk with devices displaying a circular red indication (signal or beacon) to motorists at the pedestrian crossing location. A HAWK signal provides yellow and red indications for drivers when the pedestrian phase is activated and remains dark when there are no pedestrians.
- **Traffic Signal:** crosswalk with traffic control signal. A traffic signal is subject to requirements specified in the MUTCD. A midblock traffic signal typically dwells in steady green (or green arrow) for vehicles and turns red for vehicles when the pedestrian phase is activated.

Source: Middlefield Park Master Plan

Figure 14
Proposed Midblock Crossing Locations and Recommendations

The pedestrian volumes used to determine the treatments for the midblock crossings are based on the pedestrian flow model, prepared by ARUP and provided by the project applicant (see Appendix G). The pedestrian flow model estimated the pedestrian volumes during the 3 - 4 hour AM peak period based on pre-pandemic Google mode splits for office users in the project area and represent only pedestrian arrivals. The estimates do not include existing pedestrian activities and pedestrian trips generated by other uses proposed in the project area; the model also assumes the presence of a bridge over VTA light rail, which is not part of the project. A separate pedestrian flow model was provided that includes the AM peak hour estimates (see Appendix G). However, to present a conservative assessment, the 3-4 hour AM peak period pedestrian volumes were considered peak-hour volumes for this analysis. Additional volume analysis or refinement was not conducted due to the current pandemic conditions and the lack of diverse uses at the project site today. As the Master Plan is developed, additional pedestrian volume analysis can be conducted to refine midblock crossing treatments.

A. Ellis Street North of Building O1

A high visibility crosswalk with RRFB is present on Ellis Street north of the Quad Campus driveway (proposed Street B in EWPP). The project recommends a new crosswalk north of the Building O1 to the southside of the Quad Campus driveway. Based on the peak-hour traffic on Ellis Street under background plus project conditions, if the pedestrian volume per hour would be equal to or greater than 105, a traffic signal would be warranted. If the pedestrian volume would be between 20 and 105, an active or enhanced crosswalk would be needed.

The pedestrian flow model estimated 750 to 1,000 pedestrians per peak hour crossing Ellis Street at this location because the crosswalk would serve: Google employees walking to the office buildings and retail uses from the existing GBus stop within the Quad Campus to the project area, to/from adjacent office buildings on Ellis Street, or be used by transit commuters/residents of the project between the LRT station and nearby office buildings. Thus, a traffic signal would be warranted based on the projected pedestrian volume by the model. Additionally, the traffic signal will further support pedestrian and bicycle crossings associated with any future pedestrian-bike bridge near this intersection.

With the proposed crossing, the existing Ellis Street crossing north of the Quad Campus driveway should be eliminated. It is recommended to install the signal at the Quad Campus driveway and move the proposed crossing to the south leg of the intersection to be more closely aligned with the future location of a bridge (to be designed and constructed by the City).

B. Middlefield Road at the LRT Tracks

A multi-use path is present along the west side of the LRT tracks between the northwest corner of the proposed Building O2 and the South Whisman and Whisman Station neighborhoods. The path can be accessed via Middlefield Road. However, currently there is no marked crosswalk on Middlefield Road. Based on the peak-hour traffic on Middlefield Road under background plus project conditions, if there would be 20 to 460 pedestrians/bicycles per hour crossing Middlefield Road, a red signal or HAWK beacon crosswalk would be warranted. The MPMP pedestrian flow model estimated fewer than 100, but more than 20, pedestrians per hour crossing Middlefield Road at this location. Thus, a red signal or HAWK beacon would be warranted. However, due to the proximity of LRT tracks, for operational coordination and safety, a traffic signal is recommended. The preemptive pedestrian signal should be interconnected and coordinated with the signal at Logue Avenue and Middlefield Road. Additional queueing analysis should be conducted to further determine traffic signal coordination.

Bus Stop Redesign Options

There is an existing bus duck out located just west of the LRT tracks along westbound Middlefield Road for VTA Route 21 and MVgo Route A. Both routes have headways of 30 to 60 minutes. To accommodate the project, the existing VTA bus duck out needs to be redesigned primarily to accommodate an emergency vehicle access (EVA) entrance for the project and, secondly, to accommodate the proposed midblock crossing and Class IV protected bike lanes on Middlefield Road consistent with the EWPP. The City, project applicant, VTA and the California Public Utilities Commission (CPUC), who own and oversee the safety of the light rail tracks, is considering three bus stop redesign options: (a) bus turn-out with bus island (Figure 15), (b) in-line bus stop with bus island (Figure 16), and (c) bus stop without island (Figure 17).

(a) Bus Turn-Out with Bus Island

The turn-out would be approximately 36 feet west of the proposed midblock crosswalk. Although the bus turn-out would be located close to the proposed crosswalk, buses are not expected to block the crosswalk, because it is unlikely to have two or more buses stop at the same time, based on the current bus headways. This option would not cause delays to the westbound traffic, as the bus lane would be separated from the travel lane. With the addition of the bus island, the bus would not have to cross the bike lane to arrive at the bus stop, which provides added safety for bicyclists. However, pedestrians would have to cross the bike lane with caution to get to the bus island from the sidewalk. The design shows a raised pedestrian crossing between the sidewalk and bus island to alert bicyclists.

(b) In-line Bus Stop with Bus Island

The in-line bus stop would be approximately 100 feet east of the Ellis Street intersection and 190 feet west of the proposed crosswalk. The bus would need to stop in the travel lane for this option, which would cause delays to the westbound traffic. The in-line option would potentially result in a westbound vehicle queue that extends to the crosswalk and rail track. However, based on the current bus headways, the vehicle queue would only occur briefly, assuming the buses would load passengers efficiently and would not wait at the bus stop. Similar to the turn-out with island option, the bus would not have to cross the bike lane to arrive at the bus stop, but pedestrians would have to cross the bike lane with caution to get to the bus island from the sidewalk.

(c) Bus Stop without Island

The no island bus stop would be approximately 95 feet east of the Ellis Street intersection and 195 feet west of the proposed crosswalk. This option would be similar to the existing bus stop, but would move the stop closer to the Ellis Street intersection. This option would not cause delays to the westbound traffic, as the bus lane would be separated from the travel lane. However, because the stop is closer to the intersection, the bus departing the stop would need to wait for westbound queues to clear the signal and wait for a gap to merge into the westbound travel lane. Although this option would separate the bus stop and the travel lane, the bus would be required to cross over the bike lane to get to the stop. This would not improve safety for bicyclists compared to the existing configuration or the other two design options. However, pedestrians would wait for the bus on the sidewalk and would not have to cross the bike lane.

C. Logue Avenue North of Building R3

Based on the peak-hour traffic on Logue Avenue under background plus project conditions, the crossing would require a traffic signal if greater than 862 pedestrians per hour were present. If the pedestrian volume per hour would be fewer than 862, a marked crosswalk would be warranted.

The MPMP pedestrian flow model estimated 750 to 1,000 pedestrian crossings per peak hour crossing Logue Avenue at this location because the crosswalk would be used by Google employees to walk to and from the office buildings to the P1 and P2 garages or by transit commuters to walk between the LRT station and the office and residential buildings via a future pedestrian-bicycle bridge over the LRT tracks (to be designed/constructed by the City). Thus, a traffic signal would be warranted based on the projected pedestrian volume by the model. However, the model assumed a pedestrian bridge crossing over the

Figure 15
VTA Bus Duck Out Option - Bus Turn-Out with Bus Island

HEXAGON

NORTH
Not to Scale

Figure 16
VTA Bus Duck Out Option - In-Line Bus Stop with Bus Island

Figure 17
VTA Bus Duck Out Option - Bus Stop without Island

NORTH
Not to Scale

LRT tracks is present, so there would be a high pedestrian volume traveling between Ellis Street and Logue Avenue using the crosswalk on Ellis Street, north of Building O1 (Midblock A), and at this crossing.

Prior to the pedestrian bridge crossing over the LRT tracks, there would be fewer pedestrians using this midblock crossing. Therefore, an active crosswalk with RRFB is recommended prior to installation of the bridge. A signal at the midblock crosswalk should be reevaluated as part of the bridge design and review process. However, the project should install infrastructure (e.g., conduits, lighting, etc.) at the Logue Avenue midblock crossing to facilitate an easier installation of a future signal.

D. Clyde Avenue South of Buildings O4 & O5/P1

Based on the peak-hour traffic on Clyde Avenue under background plus project conditions, the crossing would require a traffic signal if greater than 387 pedestrians per hour were present. If the pedestrian volume would be between 20 and 387, an active or enhanced crosswalk would be needed.

The pedestrian flow model estimated 750 to 1,000 pedestrians per hour crossing at this location because the crosswalk would be next to the proposed parking garage and would be used by Google employees to walk to the office buildings from the parking garage. Thus, a traffic signal would be warranted based on the projected pedestrian volume by the model. It is unknown whether the driveway to P1 parking garage would be located on the north or south side of the building. It is recommended that the P1 driveway be on the north side of Building O5/P1 to align with the service street north of Buildings O3 and O4 to create an intersection. The midblock crossing D should be by itself, allowing it to be at least 100 feet from the driveway.

As an alternative to signal control, a roundabout was evaluated as a traffic control option for the midblock crossing. A roundabout was found to not be appropriate for the crossing because it would function like stop signs in that vehicles would need to frequently stop for pedestrians, which would create substantial delay for vehicle traffic on Clyde Avenue based on the projected pedestrian volume. Clyde Avenue has a curb-to-curb width of 50 feet. A mini roundabout typically requires 80 feet in diameter. Thus, a mini roundabout for the crossing would require taking approximately 15 feet of right-of-way from both sides of the street further reducing park open space. Thus, a roundabout is not recommended.

E. Clyde Avenue North of Building R5

Based on the peak-hour traffic on Clyde Avenue under background plus project conditions, the crossing would require an active or enhanced crosswalk if there would be 25 to 364 pedestrians per hour crossing Clyde Avenue.

The pedestrian flow model estimated fewer than 100, but more than 25, pedestrians per hour crossing at this location. Thus, an active crosswalk would be warranted based on the projected pedestrian volume by the model. The proposed crosswalk would be near the driveway to P2 parking garage, which would be located on the south side of the building and would be used by Google employees to walk to the office buildings from the parking garage, or, if a shared garage, with park users. It is recommended the crossing be installed at the P2 driveway, allowing pedestrians to be more visible to vehicles exiting the garage. This crossing should be at least 300 feet from the proposed midblock Crossing D to generally align with the south side of Maude Park and the EWPP block lengths.

Effects on Surrounding Neighborhood Streets

Direct access to the plan area is via two major arterials (Ellis Street and Maude Avenue) and one local street (Clyde Avenue). Surrounding arterials that also provide access to the plan area include Middlefield Road, Moffett Boulevard, Mary Avenue, and Mathilda Avenue. Because of the easy access to the plan area from major arterials, project traffic is not expected to use/cut-through neighborhood residential streets. In addition, there are no neighborhood residential streets that would provide direct access to Ellis

Street or Maude Avenue near the plan area. It should be noted that Middlefield Road, Ellis Street, and Maude Avenue are already serving commercial uses in the project vicinity. Therefore, the project is not expected to cause an adverse effect or cut-through traffic issues on the surrounding neighborhood streets.

There would be potential cut-through traffic along Fairchild Drive/Leong Drive between Moffett Boulevard and Ellis Street to bypass congestion along US 101. Leong Drive/Fairchild Drive does not have any stop signs between Moffett Boulevard and Ellis Street, which could promote cut-through for drivers who are familiar with the area. However, the segment of US 101 between Moffett Boulevard and Ellis Street is generally not as congested as the rest of the freeway. Thus, it is not likely that vehicles would use Fairchild Drive to cut through. The City's Neighborhood Traffic Management Plan (NTMP) is available to address any concerns for the neighborhood, and the project should contribute to the traffic calming measures identified in the NTMP if the project results in cut-through traffic along Leong Drive/Fairchild Drive.

5. Site Access, Circulation, and Parking

A review of the project plan area was performed to determine if adequate site access and circulation would be provided and to identify any access or circulation issues that should be improved. This review is based on the draft Middlefield Park Master Plan presented in Figure 2, and in accordance with generally accepted traffic engineering standards. A parking analysis was conducted to compare the City's parking requirements to the parking demand based on local surveyed utilization rates and ITE parking demand rates. The analysis also includes a shared parking analysis.

This report has analyzed the project with service streets serving all residential/mixed-use and office locations, excluding R1, R6 and P2 which are served by driveways. Should any modifications occur to the project to replace service streets with driveways or non-vehicular access (e.g., paseos, multi-use paths), additional transportation analysis may be required under a separate MTA.

Motor Vehicle Access and Circulation

Motor vehicle access to and from the proposed buildings would be provided via one service street and one driveway on Ellis Street, two service streets at the cul-de-sac on Logue Avenue to Clyde Avenue, two service streets and one driveway on Maude Avenue, and one service street and one driveway on Clyde Avenue (see Figure 18). The northern Ellis Street service street (#1) would provide full access to the building O1 garage and the buildings R1 and R2 shared garage. The southern entrance (#2) on Ellis Street would be a right-in, right-out only driveway and would provide access to the buildings R1 and R2 shared garage. The Logue Avenue service streets (#3) would provide access to the O2, O3, and O4 office buildings and garages. The western most Maude Avenue service street (#4) would provide access to each respective garage for buildings R3, R4, R4 affordable (R4 aff). The middle service street (#5) on Maude Avenue would provide access to the buildings R4, R4 aff, and R5 parking garages. The eastern most Maude Avenue driveway (#6) would provide access to the R6 residential building and parking garage. The northern Clyde Avenue service street (#7) would provide access to the O4 and O5 office buildings and garages as well as the P1 parking structure for office use. The southern Clyde Avenue driveway (#8) would provide access to the P2 parking garage.

The parking garages at buildings R1, R2, R3, R4, R4 aff, and R5 would provide parking spaces for the residential, retail, and community uses within each respective building location. Building R4 aff and R6 would provide parking for residential use only. Parking garages P1 and P2 would be used by all office buildings as part of a parking district. An analysis was conducted to determine if office and park uses could share the use of these district garages during and outside of office hours, as discussed later in this section.

Source: Middlefield Park Master Plan

Figure 18
Proposed Driveway Access Points

Private Service Street/Driveway Design

The project would provide a service street north of Buildings O2, O3, and O4, which would be accessed via Logue Avenue and Clyde Avenue. Additional service streets would be provided for buildings O1, R3/R4/R4 aff, and R4/R4 aff/R5, and O5/P1 (see Figure 18). The EWPP identifies service streets as slower, narrower streets that serve as access to parking garages, addresses for residential units, commercial loading spaces, and delivery for offices or R&D uses, which are private but can be publicly accessible. Service streets include trees and sidewalks, where bicycles may share the travel lane with slow-moving vehicles. Service streets that are a fire lane must be at least 26 feet wide (curb to curb) with a 13-foot vehicle lane in each direction, for a total width of 46 feet with a separation of 55 to 65 feet between buildings. Service streets must include a 5-foot minimum width sidewalk, separated from the street by landscaping. The proposed service streets would need to meet these requirements.

According to Mountain View's Zoning Ordinance, Section 36.32.80(e), two-way driveways should be a minimum of 18 feet wide, unless fire access requires a minimum width of 26 feet. The driveways to parking garage P2, building R1/R2 shared garage, and building R6 should meet the City's requirement.

Sight Distance at Project Driveways

The project driveways and service street entrances should be free and clear of any obstructions to optimize sight distance per the City's Standard Details A-22, thereby ensuring the exiting vehicles can see pedestrians coming from either direction on the sidewalk and other vehicles or bicycles traveling on the street. The EWPP requires 200 feet between each driveway, and driveways must be at least 50 feet from street corners. Because the Master Plan is conceptual, all measurements between driveways and intersections are estimates. The project will be required to follow the sight distance requirements at the time of permitting for each phase of development.

Ellis Street Driveways

The posted speed limit on Ellis Street is 40 mph. The stopping sight distance is 300 feet per the City's Standard Details A-22. Thus, a driver must be able to see 300 feet in both directions on Ellis Street to locate a sufficient gap to turn out of the service street or driveway.

The two vehicle entries/exits (#1 and #2) on Ellis Street would be located approximately 340 feet apart from each other. There are no roadway curves on Ellis Street, which gives adequate sight distance between the two vehicle access points. The southern driveway (#2) is estimated to be located 275 feet north of Middlefield Road. Vehicles turning from Middlefield Road are expected to travel at lower speeds while making turns. Given that vehicles turning onto northbound Ellis Street from Middlefield Road are more likely to travel at a speed of 15 mph, the recommended stopping sight distance would be 125 feet (based on a design speed of 20 mph), which means that sufficient sight distance would be provided for exiting vehicles at the southern driveway (#2) with restricted right-turn exiting only.

Maude Avenue Driveways

There is a slight roadway curve on Maude Street east of Clyde Avenue. However, based on the posted speed limit of 25 mph and the recommended stopping sight distance of 150 feet, a driver would be able to see both directions on Maude Street to locate a sufficient gap to turn out of the service streets and driveway. Thus, both service streets (#4 and #5) for buildings R3, R4/R4 aff, and R5 would have sufficient sight distance from the roadway curve. The two service streets (#4 and #5) on Maude Avenue to buildings R3, R4/R4 aff, and R5 are estimated to be approximately 300 feet apart, which is adequate sight distance given that vehicles are likely to travel slowly while exiting either service street. However, any on-street parking near the service streets/driveways could potentially block the exiting drivers' sight. Thus, it is recommended on-street parking be removed on the north side of Maude Avenue along the project frontage to avoid blocking visibility and to implement buffered bicycle lanes as envisioned by the Precise

Plan. Should the buildings be constructed prior to installation of the modifications to street parking and bike lanes on Maude Avenue, as an interim measure, the project should provide 15 feet of red curb next to the service streets and driveways to provide adequate sight distance.

The proposed driveway for building R6 would be located approximately 55 feet west of Clyde Avenue. Vehicles turning from Clyde Avenue would need to stop prior to entering the intersection. Vehicles stopped at the intersection would be able to see vehicles turning out of the driveway, so the sight distance would be adequate. However, street parking is permitted along both sides of the driveway, which could block the sight distance for outbound vehicles. The project should provide 15 feet of red curb next to the driveway and along the street frontage within the intersection so the outbound vehicles could clearly see the oncoming vehicles from Maude Avenue and Clyde Avenue.

Alternatively, Building R6 could be designed with a driveway in alignment with the intersection of Clyde Avenue and Maude Avenue. With the driveway opposite Clyde Avenue, exiting vehicles would easily be able to make left and right turns out of the driveway with no sight distance issues. The project should provide red curb on either side of the driveway for the portions of the project frontage within the intersection.

Clyde Avenue Driveways

There is a roadway curve on Clyde Avenue north of the northern service streets. Based on the posted speed limit of 25 mph and the recommended stopping sight distance of 150 feet, a driver would be able to see both directions on Clyde Avenue to locate a sufficient gap to turn out of the service streets (#7). Drivers exiting the northern service streets need to be able to see 150 feet and see southbound drivers approaching prior to the curve. The northern service streets (#7) at O4/O5/P1 and the southern driveway (#8) at P2 are estimated to be approximately 350 to 400 feet apart from each other. On-street parking is allowed near the service street entrance to O4, which could potentially block the exiting drivers' sight. Thus, the project should provide 15 feet of red curb next to the service street entrance.

Similar to Maude Avenue, the MPMP proposes to remove parking along one side of Clyde Avenue per the EWPP but does not specify which side. Because Maude Park is on the west side of Clyde Avenue, which would benefit from on-street parking, and there are fewer vehicle curb cuts, it is recommended that on-street parking be removed on the east side of Clyde Avenue along the project frontage to implement buffered bicycle lanes consistent with the EWPP. Should the project buildings be constructed prior to implementation of the removal of parking and bike lane reconfiguration, as an interim measure to prevent blocking the exiting drivers' sight, the project should provide 15 feet of red curb next to the driveways.

Driveway Operations

Traffic operations at the project service streets/driveways were evaluated to identify whether there would be vehicle queuing issues. The trips that are estimated to occur at each entrance and exit are shown in Figure 19. Table 11 summarizes the estimated maximum inbound vehicle queues on streets and outbound vehicle queues at the driveways. The results show that the driveways are not expected to experience any on-site or on-street queuing issues, as the driveways are expected to have a minimum queue storage of two vehicles for both the inbound and outbound directions.

A signal warrant analysis was also conducted for the new service streets/driveways along Ellis Street, Maude Avenue, and Clyde Avenue. The results of peak-hour signal warrant analysis indicate that all service streets/driveways, except the O1/R2 service street (#1), would not meet the thresholds that warrant signalization under background plus project conditions during either of the peak hours (see Table 12). The peak-hour signal warrant sheets are included in Appendix E.

Figure 19
Project Driveway Trips

NORTH

Table 11
Driveway Queuing Analysis

Analysis Scenario	Ellis Street & O1 Driveway				Maude Avenue & R3/R4 Driveway				Maude Avenue & R4/R5 Driveway			
	SBL		WB		EBL		SB		EBL		SB	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Project Conditions												
Delay (sec)	11.0	7.7	26.4	16.7	12.3	7.6	12.5	11.0	7.7	7.8	11.3	11.0
Volume (vph)	160	149	119	273	15	45	105	72	23	62	126	87
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	160	149	119	273	15	45	105	72	23	62	126	87
95th %. Queue (veh/ln)	2	2	3	3	1	1	2	1	1	1	2	1
95th %. Queue[1] (ft/ln)	50	50	75	75	25	25	50	25	25	25	50	25
Storage (ft/ln)[2]	250	250	--[3]	--[3]	240	240	--[3]	--[3]	300	300	--[3]	--[3]
Storage Type	TWLT		Driveway		EB lane		Driveway		EB lane		Driveway	

Notes:
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; L = left turn movement; TWLT = two-way left-turn
[1] Assumes 25 feet per vehicle queued.
[2] Storage length measured from intersection to upstream intersection or driveway.
[3] Site plans are not available. During design, the 95th percentile queue should be the minimum storage length in feet.

Table 11
Driveway Queuing Analysis (continued)

Analysis Scenario	Maude Avenue & R6 Driveway				Clyde Avenue & O4 & O5/P1 Driveway								Clyde Avenue & P2 Driveway			
	WBL		NB		NBL		EB		SBL		WB		SBL		WB	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Project Conditions																
Delay (sec)	7.6	7.5	10	9	7.6	7.6	13.0	11.1	8.8	7.6	19.3	17.4	8.8	7.7	14.8	12.6
Volume (vphpl)	10	34	40	25	53	9	12	64	107	17	60	312	33	5	16	86
95th %. Queue (veh/ln)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
95th %. Queue[1] (ft/ln)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Storage (ft/ln)[2]	55	55	--[3]	--[3]	200	200	--[3]	--[3]	200	200	--[3]	--[3]	430	430	--[3]	--[3]
Storage Type	WB Lane		Driveway		NB lane		Driveway		SB lane		Driveway		SB lane		Driveway	

Notes:
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; L = left turn movement; TWLT = two-way left-turn
[1] Assumes 25 feet per vehicle queued.
[2] Storage length measured from intersection to upstream intersection or driveway.
[3] Site plans are not available. During design, the 95th percentile queue should be the minimum storage length in feet.

Table 12
Driveway Signal Warrant Analysis Summary

Service Street/Driveway	Signal Warrant Met[1]
Ellis Street & O1/R2 Service Street	Yes
Ellis Street & R1/R2 Driveway	No
Maude Avenue & R3/R4 Service Street	No
Maude Avenue & R4/R5 Service Street	No
Clyde Avenue & O4 & O5/P1 Service Street	No
Clyde Avenue & P2 Driveway	No

Note:
1. Based on the California Manual on Uniform Traffic Control Devices for Streets and Highways, Warrant 3 - Peak Hour.

The service streets/driveways along Logue Avenue were not considered for a signal warrant as the driveways would be at the end of the proposed cul-de-sac. The driveway to building R6 was also not considered for a signal warrant.

Building O1/R2 Service Street (#1)

The service street would provide full access to the Building O1 garage and the Building R1/R2 shared garage. The peak-hour volume at the service street intersection would warrant a signal.

Building R6 Driveway (#6)

The driveway to building R6 is shown only 55 feet from the nearby Clyde Avenue/Maude Avenue intersection, which could make it difficult for vehicles to make a left turn into the driveway if the eastbound queue at the intersection were to extend past the driveway. The queuing analysis shows that the estimated eastbound queue at the Clyde Avenue/Maude Avenue intersection would not extend past or block the driveway. Thus, vehicles would be able to make a left turn into the driveway. Regardless, to minimize the project's traffic effect on Maude Avenue and delay for vehicles accessing the building R6 site, the driveway should be restricted to right in and right out only. For the right-in, right-out control option, because all trips would make a right turn into and out of the driveway, operational issues related to vehicle queueing and vehicle delay for inbound and outbound traffic are not expected to occur at the driveway.

Alternatively, the driveway could be located east of the intersection, between Building R6 and Gateway Park, so vehicles could make a left turn into the driveway without affecting traffic on Maude Avenue. Because of the nearby signal at SR 237 and stop control at Clyde Avenue that provides gaps in traffic on Maude Avenue, the project traffic would be able to turn in and out of the driveway without difficulties. The driveway option would not change the findings of the intersection operations analysis described in Chapter 4 for the SR 237 Ramps/Maude Avenue and Clyde Avenue/Maude Avenue intersections.

The building R6 driveway could also be aligned with the Clyde Avenue/Maude Avenue intersection. With this alternative alignment, the intersection would still operate at an acceptable level (D or better) with the all-way stop. The alignment of the driveway to the intersection would not change the findings of the signal warrant analysis described in Chapter 4 for this intersection.

Building O5/P1 Driveway (#8)

It is unknown whether the driveway to Building O5/P1 would be located on the north or south side of the building. It is recommended that the O5/P1 driveway be on the north side of Building O5/P1 to align with the service street north of Buildings O3 and O4 and to create an intersection. The intersection also would not meet the thresholds that warrant signalization under background plus project.

Truck Access and Circulation

Emergency Vehicle Access (EVA)

Emergency response vehicles would access the project site from Ellis Street, Middlefield Road, Logue Avenue, Maude Avenue, Clyde Avenue, and all project driveways/service streets. Additional emergency access would be provided via an emergency vehicle access path, also doubling as a multi-use path, on the west side of the light rail tracks north of Middlefield Road. Another potential emergency vehicle access lane may be located on the south side of O5/P1. Emergency access would also be provided through the service street north of buildings O2, O3, O4, and O5/P1 and the service streets between R3/R4/R4 aff and R4/R4 aff/R5 (see Figure 20).

As required by the EWPP, if emergency access is required for residential paseos and multi-use paths, additional width is required to accommodate the 26-foot-wide emergency access. Additionally, dead-end emergency access lanes that exceed 150 feet in length must be provided with a turn-around, which some of the service streets may need to comply with. The emergency access road west of the LRT tracks is a multiuse path that meets the EWPP requirement for EVA access. Buildings greater than 30 feet in height require a minimum of two EVA roads. All buildings would be greater than 30 feet in height, and all buildings are shown to have at least two EVA roads as previously described through the driveways, service streets, multi-use paths, and public streets.

Garbage Collection

The project is required to provide trash, recycling, and composting services within at least one trash and recycle enclosure of each building. It is expected that trash bins would be towed from the trash enclosures to the loading area for each building in the project driveway or service street staging area, or, if accommodated inside of the parking garage, which would be used as trash staging on garbage collection days. Therefore, trash collection would occur on-site in each building.

Loading

EWPP Requirements

Residential Uses

For residential uses, the EWPP requires one loading space per 200 units for pick-up/drop off, short-term parking, and loading and deliveries, in addition to one designated moving truck location. Table 13 shows the number of required loading spaces for the residential uses of the project, excluding one required moving truck space at each residential building.

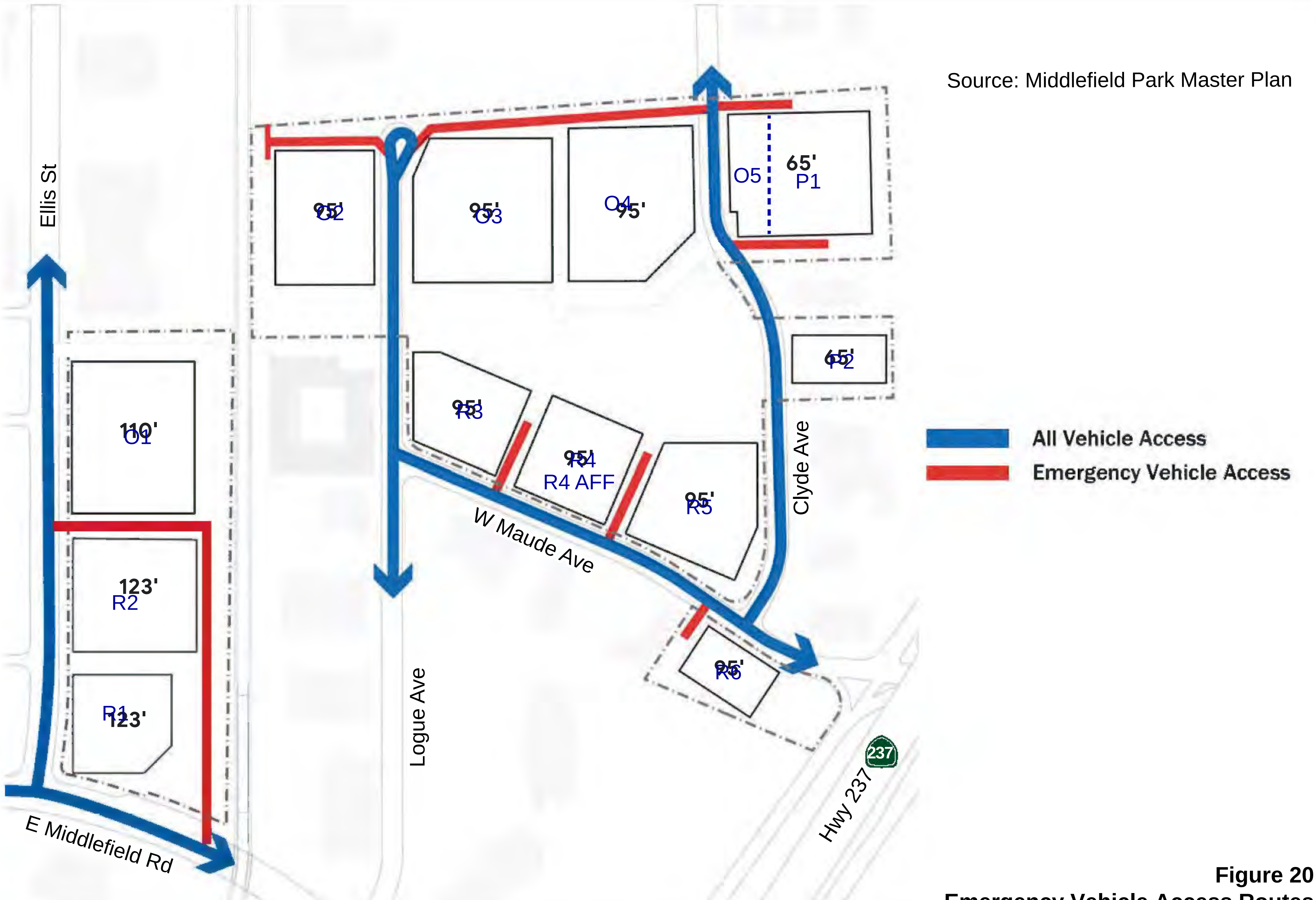


Figure 20
Emergency Vehicle Access Routes

Table 13
Required Loading Spaces for Residential Uses

Buliding	Size	Required Loading Spaces
R1	400 units	2
R2	450 units	3
R3	270 units	2
R4	90 units	1
R4 Aff	210 units	2
R5	310 units	2
R6	170 units	1
Total	**1900 units**	**13**

Nonresidential Uses

For nonresidential uses, the EWPP follows the City zoning code for loading space requirements. The code requires one loading space for nonresidential uses occupying 10,000 to 30,000 square feet of building area. For uses occupying greater than 30,000 square feet of building area, one additional space is required for every additional 20,000 square feet. The project would build 1,367,000 square feet of non-residential uses. Thus, the project would require 69 loading spaces per the zoning code. The breakdown of spaces is shown in Table 14. R4 aff and R6 buildings are not listed in Table 14, as they do not include nonresidential uses.

Table 14
Required Loading Spaces for Non-Residential Uses

Proposed Uses	Size	Required Loading Spaces
Office Uses		
O1	441,939 s.f.	22
O2	190,000 s.f.	10
O3	310,000 s.f.	16
O4	292,212 s.f.	15
O5/P1	82,849 s.f.	4
Office Subtotal	**1,317,000 s.f.**	**67**
Retail/Community Uses		
R1	18,308 s.f.	1
R2	12,633 s.f.	1
R3	3,877 s.f.	0
R4	1,955 s.f.	0
R5	4,227 s.f.	0
P2/Community/Civic	9,000 s.f.	0
Retail/Community Subtotal	**50,000 s.f.**	**2**
Total	**1,367,000 s.f**	**69**

Recommended Loading Spaces

Per the zoning code, the project would be required to provide a total of 82 loading spaces (69 for office uses and retail/community uses, and 13 for residential uses). To determine the actual number of loading spaces that would be used, a study was prepared by ARUP (supplied by the applicant) to estimate the number of loading spaces needed for deliveries and loading per a demand-based approach using demand rates from local and global data surveys (see Appendix H). Based on the study, the number of loading spaces to meet peak loading demand would be 18 spaces for the office buildings and 15 spaces for the residential/mixed-use buildings (including retail/community uses), where it is assumed 15 percent of all deliveries arrive in the peak hour and each truck has a 30-minute turnaround time. Table 15 shows the recommended number of loading spaces for deliveries and loading based on the peak loading demand. Spaces required for the storage and collection of garbage or a moving truck are separately required per residential/mixed-use building and were excluded from the ARUP study.

The loading zones and loading docks would be accessed via the proposed service streets/driveways. The project would prioritize minimizing off-street and on-street loading activities during peak hours to reduce potential conflicts between passenger vehicle site access and loading services.

Table 15
Recommended Loading Spaces Based On Peak Demand

Buildings	Recommended Loading Spaces
Office	
O1	6
O2	3
O3	4
O4	4
O5/P1	1
Office Subtotal	**18**
Residential Mixed Use	
R1	4
R2	3
R3	2
R4	1
R4 Aff	1
R5	3
R6	1
Mixed Use Subtotal	**15**
Total	**33**

Proposed Flex/Loading Zone Locations

The EWPP encourages loading docks to be screened on private property and in locations least visible from public streets, parks, or open spaces. However, the EWPP provides an option for curbside "flex zones" on local streets (Logue, Maude, and Clyde Avenues). Flex zones uses may include parking, passenger pick-up/drop-off, delivery loading, shuttle/transit stops, and other uses as approved by the City. Per the EWPP, Logue Avenue, Maude Avenue, and Clyde Avenue are planned to provide on-street parking along one-side of the street; and therefore, one off-street parking space/loading area on the designated street parking side could be designated as a flex zone.

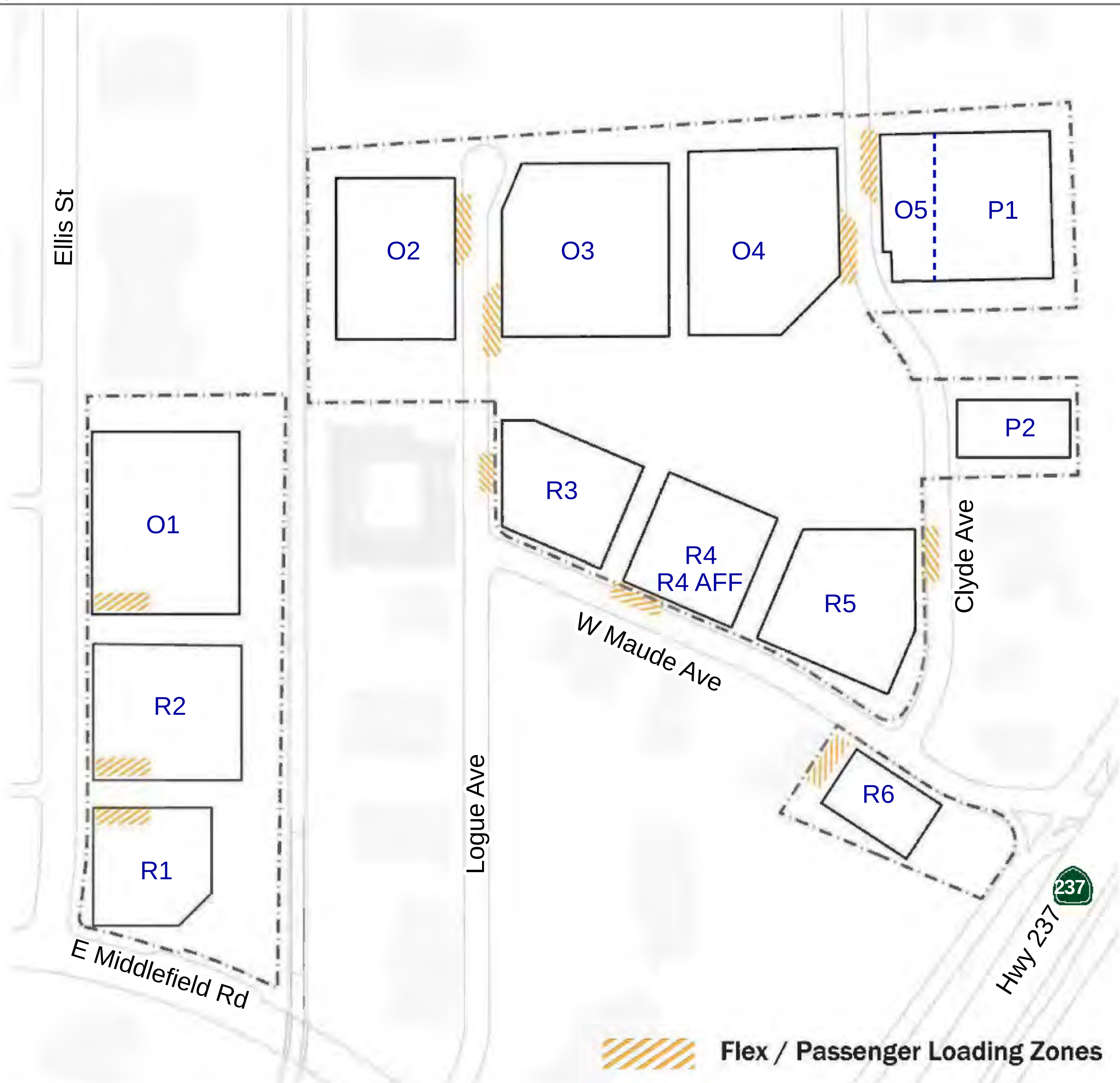
The project proposes on-street flex zones in various locations within the plan area (see Figure 21) for passenger pick-up/drop-off and delivery loading. At buildings O1, R1, R2, and R6, the loading zones are proposed within the parking garages or service streets/driveways on private property. All other flex zones are proposed on public streets. All flex zones should be free and clear of driveways and midblock crossings and should not interfere with planned bike lanes. The building O2, O3, and R3 flex zones are proposed on Logue Avenue. The building R4/R4 aff flex zone is proposed on Maude Avenue. The building O4, O5, and R5 flex zones are proposed on Clyde Avenue. All flex zones would be provided on local public streets and private service streets, which would meet the EWPP requirement. Table 16 provides a summary of recommendations to retain the flex zone as proposed or to relocate to a service street, based on the draft Master Plan.

Table 16
Flex Zone Recommendations

Flex Zones	Retain as Proposed	Relocate to Service Street
R1	X (on site)	
R2	X (on site)	
R3		X
R4/R4 Aff		X
R5		X
R6	X (on site)	
O1	X (on site)	
O2	X (on street)	
O3		X
O4		X
O5		X

The building O1, R1, R2, and R6 flex zones within the service streets, driveway, or parking garages would be good locations as conflicts between passengers and vehicles are expected to be few. The service streets/garages would provide better flex zone spaces for Buildings O1, R1, and R2, as Ellis Street is considered an arterial with no on-street parking. For Building R6, providing a flex zone on the street would be close to the intersection, which could cause potential conflicts between vehicles. Within the private driveway, there could be potential conflicts between passengers and loading vehicles; however, as previously described, the project would prioritize minimizing loading activities during peak hours to reduce potential conflicts between passenger vehicle site access and loading services. Thus, the on-site location is appropriate for Building R6.

The Logue Avenue flex zones (O2, O3 and R3) would be ideal only for the O2 building. As part of the project, buffered bike lanes would be implemented by removing parking on one side of the roadway along the project frontage. Although, the MPMP does not specify, it is recommended on-street parking be removed on the east side of Logue Avenue along the project frontage because the project has the frontage for the entire segment north of Maude Avenue. Without on-street parking, it is not possible to accommodate the proposed on-street flex zones for Building R3 and O3 without blocking the bike lane. Therefore, the flex zones for the R3 and O3 buildings should be located within their respective private service streets or parking garages.



Source: Middlefield Park Master Plan

Figure 21
Proposed Flex/Loading Zones

The flex zone for the O2 building would be located in the parking lane near the cul de sac. It is assumed that the cul de sac would be large enough to accommodate truck maneuver within the cul de sac without interfering with the parking lane on Logue Avenue. It is recommended the flex zone be located directly adjacent to the cul de sac, so vehicles could access the flex zone easily.

As envisioned by the EWPP, the MPMP would also implement buffered bike lanes by removing parking along one side of the roadway along Maude and Clyde Avenues. However, the MPMP does not specify which side of the street. It is recommended that on-street parking be removed on the north side of Maude Avenue along the project frontages. Therefore, it is recommended the loading zones for building R4/R4 aff be provided within one of the service streets or within the respective parking garage. Because Maude Park is on the west side of Clyde Avenue, which would benefit from on-street parking, on-street parking should be removed on the east side of Clyde Avenue along the project frontages with the implementation of buffered bicycle lanes. Therefore, the on-street flex zone for building O5 should be relocated to the service street or parking garage.

The proposed flex zones on the west side of Clyde Avenue for Buildings O4 and R5 would be good location for southbound traffic along Clyde Avenue. Passengers would be able to exit the vehicle and be directly in front of the O4 and R5 buildings. However, the flex zone would be an issue for northbound vehicles, as drop off vehicles would need to make a U-turn in the middle of Clyde Avenue or enter and exit the O4, O5, or P2 building driveways to approach the flex zones. This could cause issues for inbound and outbound project traffic at the driveway, as well as any through traffic along Clyde Avenue. Thus, the building O4 and R5 flex zones should be provided within the service streets with adequate turnaround space for vehicles to exit onto the street or within the respective parking garages.

All flex zones recommended to be relocated to the service street, project driveway, or respective parking garage would need to be align with on-site loading requirements for the project.

Parking

Vehicle Parking

Vehicle parking for the project was reviewed per the City of Mountain View requirements, State of California Density Bonus Law, parking demand rates from local utilization survey data, the ITE *Parking Generation Manual,* the GreenTRIP Parking Database, the CAPCOA *Handbook for Analyzing Greenhouse Gas Emission Reductions*, and the Urban Land Institute (ULI) publication *Shared Parking*. A shared parking analysis was conducted for residential and retail/community/civic uses within the same building and for the district parking garages based on the ULI *Shared Parking* methodology.

Parking rates for office use, retail/community/civic use, and park use are evaluated based on local utilization survey data and the *ITE Parking Generation Manual*.

For the residential mixed-use buildings, parking spaces were evaluated for the following three scenarios based on the options for unbundled residential parking and shared parking. The residential market-rate unit mix was provided by the applicant: 26% studio units, 38% 1-bedroom units, 32% 2-bedroom units and 4% 3-bedroom units.

- **Scenario 1: No Shared, No Unbundled Parking.** This scenario establishes a parking rate per market rate residential unit based on local utilization survey data and assumes parking is bundled (included) in monthly rent and assigned per unit. No shared parking is assumed with the ground-floor retail/community/civic uses in the same building.
- **Scenario 2: No Shared, With Unbundled Parking.** This scenario establishes a parking rate per market rate residential unit based on the GreenTRIP Parking Database and the CAPCOA Handbook for parking reduction from unbundled parking. The parking is assumed to be unbundled

with the residential units. Unbundled spaces mean a separate monthly rent is charged per parking space and is assigned to a unit only when rented. This scenario assumes separate parking for the retail/community/civic uses in the same building – no shared parking.

- **Scenario 3: Shared and Unbundled Parking.** This scenario assumes a parking rate per market rate residential unit as identified in Scenario 2, but with shared parking for the retail/community/civic uses within the same building.

For purposes of the parking analysis, in the three residential scenarios discussed, the retail/community/civic use parking rate is consistent.

The project proposes 4,276 total vehicle parking spaces, including 2,634 spaces for office use (at a rate of 2.0 spaces per 1,000 s.f.) and 1,642 spaces within the residential/mixed-use buildings for residential uses (at 0.8 spaces per unit), and retail/community/civic uses (at 2.4 spaces per 1,000 gross s.f.).

East Whisman Precise Plan Parking Requirements

To establish the baseline, the vehicle parking requirements were calculated for the project based on the parking maximums and minimums established in the EWPP. Table 17 compares this baseline with the proposed parking in the Draft Master Plan. The EWPP parking requirements are:

- **Office:** Maximum of 2.9 spaces per 1,000 s.f.
- **Residential – Market Rate Units**: Maximum of one space per studio/1-bedroom unit and two spaces per unit with more than one bedroom, which is inclusive of any visitor parking.
- **Residential – Affordable Units:** Maximum of 0.5 spaces per unit per the State of California Density Bonus Law for affordable housing (AB 1763).[5] The project is located in a transit proximity area and within a half mile of the Middlefield LRT Station so this parking ratio is assumed for Buildings R4 aff and R6.
- **Retail:** Minimum of 4 spaces per 1,000 s.f.
- **Other uses:** Minimum as defined in the Zoning Ordinance. The City code does not provide a parking rate for community/civic uses. The most similar use for community uses is a church use, which requires one space per 170 square feet of gross floor area (or 5.89 spaces per 1,000 s.f.). This is a similar rate to other public assembly/community center type of uses - such as a YMCA or daycare facilities.
- **Parks:** The City does not have an adopted parking rate for parks and the project is not required to provide parking, but a rate was established for purposes of the shared parking analysis.

Based on the City's maximum office parking requirements, the project could provide no more than a total of 3,819 spaces for the office buildings. The project proposes 2,634 spaces in the office buildings and district parking garages P1 and P2 at a rate of 2.0 spaces per 1,000 s.f. of office, which is within the maximum ratio of 2.9 spaces. Additionally, the project could provide no more than a maximum total of 2,477 spaces for the residential mixed-use buildings. The project proposes 1,642 total spaces, inclusive of 0.8 spaces per residential unit and 2.4 spaces per 1,000 s.f. of retail/community/civic use, which is within the maximum allowed. While Table 17 shows the stand-alone maximum parking required for the project, the EWPP encourages shared parking where complementary uses occur, such as commercial

[5] State Density Bonus Law does identify a parking allowance of 0.5 spaces per bedroom for developments that include the maximum number of affordable low-income and very low-income units within half of a mile of transit. However, since the number of bedrooms is not known for the affordable buildings, this report assumes parking per unit under the Law.

and residential within the same building and encourages unbundled residential parking. Shared parking, unbundled parking, and lower parking ratios are appropriate to consider for this project due to the transit proximity and proposed surrounding uses.

Table 17
East Whisman Precise Parking Maximums and Minimums

Proposed Uses	Size		Parking Ratio	Required Parking Spaces	Proposed Parking Spaces
Office Use[1]					
Building O1	441,939	s.f.			450
Building O2	190,000	s.f.			250
Building O3	310,000	s.f.			150
Building O4	292,212	s.f.			150
Building O5/Garage P1	82,849	s.f.			1,334
Garage P2 [2]	--		--	--	300
Office Total	***1,317,000***	***s.f.***	***2.9 per ksf***	***3,819***	***2,634***
Building R1					
Residential[1]	104	Studio	1 per unit	104	
	152	1-bedroom	1 per unit	152	
	128	2-bedroom	2 per unit	256	
	16	3-bedroom	2 per unit	32	
Retail[3]	18,308	s.f.[6]	4 per ksf	73	
R1 Total	***400***	***units***		***617***	***354***
Building R2					
Residential[1]	117	Studio	1 per unit	117	
	171	1-bedroom	1 per unit	171	
	144	2-bedroom	2 per unit	288	
	18	3-bedroom	2 per unit	36	
Retail[3]	12,634	s.f.[6]	4 per ksf	51	
R2 Total	***450***	***units***		***663***	***337***
Building R3					
Residential[1]	70	Studio	1 per unit	70	
	103	1-bedroom	1 per unit	103	
	86	2-bedroom	2 per unit	172	
	11	3-bedroom	2 per unit	22	
Retail[3]	3,877	s.f.[6]	4 per ksf	16	
R3 Total	***270***	***units***		***383***	***244***
Building R4 Affordable					
Affordable Residential[4]	210	units	0.5 per unit	105	
R4 Affordable Total	***210***	***units***		***105***	***168***

Table 17 (continued)
East Whisman Precise Parking Maximums and Minimums

Proposed Uses	Size		Parking Ratio	Required Parking Spaces	Proposed Parking Spaces
Building R4					
Market Rate Residential[1]	23	Studio	1 per unit	23	
	34	1-bedroom	1 per unit	34	
	29	2-bedroom	2 per unit	58	
	4	3-bedroom	2 per unit	8	
Retail[3]	1,955	s.f.[6]	4 per ksf	8	
R4 Total	***90***	***units***		***131***	***92***
Building R5					
Residential[1]	81	Studio	1 per unit	81	
	118	1-bedroom	1 per unit	118	
	99	2-bedroom	2 per unit	198	
	12	3-bedroom	2 per unit	24	
Retail[3]	4,227	s.f.	4 per ksf	17	
R5 Total	***310***	***units***		***438***	***311***
Building R6					
Affordable Residential[4]	170	units	0.5 per unit	85	
R6 Total	***170***	***units***		***85***	***136***
Community/Civic Use					
Community[5]	9,000	s.f.[6]	5.9 per ksf	53	-
Office Subtotal[1]				**3,819**	**2,634**
Mixed-Use Subtotal[1, 3]				**2,475**	**1,642**
Google Middlefield Park MP Total				**6,294**	**4,276**

Notes:
1. Office and market rate residential parking ratios based on the maximum EWPP requirements.
2. P2 garage would be shared between office, retail, community/civic, and park uses during the off hours of the office.
3. Retail parking ratio based on the minimum EWPP requirements.
4. The State Density Bonus Law requires 0.5 spaces per unit in affordable housing buildings.
5. Parking ratio based on the City of Mountain View Zoning Code, Section 36.32.50, for church uses.
6. The Master Plan proposes 30,000 s.f. of retail and 20,000 s.f. of community/civic uses. However, land uses proposed under the community civic uses category would result in traffic patterns more similar to retail uses. Therefore, this analysis assumes 41,000 s.f. of retail and 9,000 s.f. community/civic uses.

Office Parking

Counts were conducted at local office buildings near transit between 2016 and 2018 by Hexagon (see Appendix I). The office locations surveyed are in close proximity to Caltrain stations or offer shuttles to a nearby Caltrain station. For office buildings near transit, the average peak parking demand rate was found to be 2.03 spaces per 1,000 s.f. Based on this rate, the parking demand for the office buildings would be 2,674 spaces, which is 40 spaces more than the proposed number of parking spaces (see Table 18).

Table 18
Office Parking Demand Based on Local Survey

Proposed Office Use	Size		Parking Demand Rate	Parking Demand (spaces)	Proposed Spaces
Building O1	441.939	ksf			450
Building O2	190.000	ksf			250
Building O3	310.000	ksf			150
Building O4	292.212	ksf			150
Building O5/Garage P1	82.849	ksf			1,334
Garage P2	--		--	--	300
Office Total	**1,317**	**ksf**	**2.03 per ksf[1]**	**2,674**	**2,634**

Note:
1. Rate per local survey rates for similar uses near transit conducted by Hexagon between 2011 and 2018.

However, Google provides the GBus shuttle service for its employees in Mountain View and Sunnyvale. Based on the MPMP TDM Plan (see Appendix J), 31.3 percent of its employees take GBus to work, which greatly reduces the parking demand. All of the proposed office buildings would be required to implement the MPMP TDM plan to meet the trip caps. Therefore, it is expected that the proposed number of office parking spaces would be sufficient to meet the demand at a ratio of 2.0 spaces per 1,000 s.f. of office. Note, this is the same parking ratio for office as approved for Charleston East and Landings by the City, both owned by Google in North Bayshore.

Retail/Community/Civic Use Parking

The parking demand that would be generated by the proposed retail/community/civic uses were estimated using the 85th percentile parking rate contained in the ITE *Parking Generation Manual*, 5th Edition, for “Shopping Center” (Land Use 820) for 41,000 s.f. and “Recreational Community Center” (Land Use 495) for 9,000 s.f., based on the types of uses anticipated. For Shopping Center, the rate is 3.68 spaces per 1,000 s.f. and, for Community Center, the rate is 3.78 spaces per 1,000 s.f. Based on these rates, the parking demand for the total project would be 184 spaces. Table 19 summarizes the parking demand per building based on the distribution of retail/community/civic uses in the project. For the P2 structure, 15 additional parking spaces would be required for the retail/community space, and for the Ellis Park Fairchild Barns, an additional 4 spaces would be required in the R1/R2 garage.

Table 19
Retail/Community/Civic Use Parking Demand Based on ITE Rates

Proposed Retail/Community/Civic Use	Size		Parking Demand Rate	Parking Demand (spaces)
Market-Rate Residential Building				
R1 Retail	18.308	ksf	3.68 per ksf[1]	67
R2 Retail/Community/Civic Use	12.634	ksf	3.68 per ksf[1]	46
R3 Retail/Community/Civic Use	4.543	ksf	3.68 per ksf[1]	17
R4 Retail/Community/Civic Use	3.621	ksf	3.68 per ksf[1]	13
R5 Retail/Community/Civic Use	5.894	ksf	3.68 per ksf[1]	22
Other				
P2 Community/Civic Use	4	ksf	3.78 per ksf[2]	15
Ellis Park Community/Civic Use	1	ksf	3.78 per ksf[2]	4
Retail/Community/Civic Use Total	**50**	**ksf**		**184**

Notes:
1. 85th percentile weekday rates for Shopping Center (Non-December) (Land Use 820) used from ITE Parking Generation Manual, 5th Edition.
2. 85th percentile weekday rates for Recreational Community Center (Land Use 495) used from ITE Parking Generation Manual, 5th Edition.

Residential Parking – Affordable Units

Per State Density Bonus Law, if an affordable housing development includes rental units for low-income or very-low income households, is located within a Transit Priority Area, and has unobstructed access to a major transit stop from the development, then, upon request of the developer, a city shall not impose a vehicular parking ratio, inclusive of handicapped and guest parking, that exceeds 0.5 spaces per unit. Since the project is located in a transit proximity area and within a half mile of the Middlefield LRT Station, this parking ratio is assumed for the two affordable buildings - Buildings R4 aff and R6. This results in 105 spaces for Building R4 aff and 85 spaces for R6 (see Table 20). The parking proposed in Building R4 affordable (R4 aff) would be 63 spaces more and for Building R6 would be 51 spaces more than what would be required by State Density Bonus Law.

Table 20
Affordable Residential Unit Parking Demand by State Law

Proposed Affordable Housing	Size		Parking Demand Rate	Parking Demand (spaces)	Proposed Spaces
Building R4 Affordable	210	units	0.5 per unit[1]	105	168
Building R6	170	units	0.5 per unit[1]	85	136
Affordable Housing Total				**190**	**304**

Note:
1. The State Density Bonus Law requires 0.5 spaces per unit in affordable housing

Residential Parking – Market Rate Units

Scenario 1: No Shared, No Unbundled Parking

A parking utilization survey was conducted on March 15, 2022, at higher-density residential complexes in Mountain View near transit services and major arterials (see Appendix I). The surveys were conducted at nighttime during the weekday when full occupancy is anticipated.[6] Some of the surveyed sites offer partial unbundled parking, with one space included with monthly rent and additional spaces offered at an additional monthly rent. Peak parking demand rates were determined based on the average number of occupied parking spaces per bedroom. On average, the parking ratio was found to be 0.72 spaces per bedroom, or 0.99 space per unit.

As a comparison, the parking ratios for approved residential developments in the EWPP area include:

- 400 Logue Avenue: 1 space per unit (or 0.85 spaces per bedroom)
- 355 E. Middlefield Road: 1.27 spaces per unit, collectively of apartments and condos
    - 1.09 spaces per apartment unit (or 0.83 spaces per bedroom)
    - 1.32 spaces per condo unit (or 0.54 spaces per bedroom)

The project proposes 0.8 spaces per unit for 1,900 residential units (market-rate and affordable units), which calculates to 0.57 spaces per bedroom. This parking ratio is lower than the majority of parking ratios for the approved residential developments and slightly lower than the unbundled parking scenario studied in Scenario 2.

Under Scenario 1, the project should provide 0.72 spaces per bedroom for market rate units, based on the local surveyed utilization rates and adjacency to transit, retail services, and open spaces. This parking rate is equivalent to 1.01 spaces per unit, but is recommended to be considered at 1 space per unit due to the minor fractional difference which can be easily absorbed by the projects residential TDM program. This rate is within the maximum parking allowed of one space per studio/1 bedroom unit and 2 spaces per 2 or more bedroom unit in the EWPP.

[6] The Q1 2022 vacancy rate of higher-density residential apartment complexes (300+ units) in Mountain View is 5.4%. This rate was provided by the City from Costar accessed on March 24, 2022.

Based on the parking rate of one space per multi-family residential unit and the retail/community use rate noted above, assuming no shared parking, the project should provide the number of parking spaces to meet the total parking demand for each building shown in Table 21.

Table 21
Market Rate Residential Scenario 1: No Shared, No Unbundled Parking Demand

Proposed Market-Rate Residential Building	Scenario 1: No Shared, No Unbundled Parking Required Per Building				
	Residential Parking Demand (spaces)	Retail/Community/ Civic Use Parking Demand (spaces)[1]	Total Parking Demand (spaces)	Proposed Parking Spaces	MPMP Parking Differential
Building R1	400	71	471	354	117
Building R2	450	46	496	337	159
Building R3	270	17	287	244	43
Building R4	90	13	103	92	11
Building R5	310	22	332	311	21
Market-Rate Residential Building Total	**1,520**	**169**	**1,689**	**1,338**	**351**

Note:
1. Parking demand for Building R1 include the demand for Ellis Park Community/Civic Use.

For Scenario 1, the parking demand generated by the residential and retail/community/civic uses would be 1,689 spaces, which is 351 spaces more than the number of proposed parking spaces (1,338 spaces) in the market-rate residential mixed-use buildings.

Scenario 2: No Shared, With Unbundled Parking

Based on local parking surveys for residential uses, some of the surveyed sites offer partial unbundled parking, with one space included with monthly rent and additional spaces offered at an additional monthly rent. To determine the residential parking demand with fully unbundled parking, the GreenTRIP Parking Database and CAPCOA *Handbook for Analyzing Greenhouse Gas Emission Reductions* (December 2021) were reviewed.

The GreenTRIP Parking Database, published by TransForm, includes parking data for 80 multi-family residential sites around the San Francisco Bay Area. The data were collected in 2013 - 2014. The data show whether unbundled parking was implemented, the cost of a parking space, and the number of unbundled parking spaces. Fourteen sites that are similar to the project were selected from the database. These sites are located in Berkeley, Union City, Mountain View, Sunnyvale, San Jose, Emeryville, and Dublin. These sites have a moderate number of units (greater than 100), provide parking spaces equal or greater than 0.57 space per bedroom, are not senior housing, had affordable units equal or less than 15%, and had vacancy rates equal or less than 5%. The parking data for the selected sites are included in Appendix I. The parking data show that these developments have an average parking demand of 0.88 space per bedroom, while the developments that implement 100% unbundled parking have an average parking demand of 0.68 space per bedroom. Thus, the parking demand for developments with fully unbundled parking is about 15% lower than the average parking demand for all sites.

The CAPCOA Handbook provides methods to quantify GHG emission and VMT reductions from a specified list of measures. For unbundled parking, the reduction is calculated based on the reduction of vehicle ownership by comparing parking space cost to vehicle cost. Based on the parking space cost, the handbook recommends up to 15.7% of VMT reduction resulting from unbundled parking with a monthly parking cost of $300 per space (see Appendix I). It is assumed that a VMT reduction is equivalent to a reduction in parking demand.

Based on the GreenTRIP Parking Database and CAPCOA Handbook, it is anticipated that fully unbundled parking could provide a parking reduction of 15% from the recommended parking rate (0.72 spaces per bedroom). With the fully unbundled parking, the parking demand could be reduced to 0.61 spaces per bedroom.

Under Scenario 2, the project should provide 0.61 spaces per bedroom for market rate units. This parking rate is equivalent to 0.85 spaces per unit, which is within the maximum parking allowed of 1 space per studio/1 bedroom unit and 2 spaces per 2 or more-bedroom units in the EWPP.

Based on the parking rate of 0.85 spaces per multi-family residential unit with unbundled parking and the retail/community use rate noted above, assuming no shared parking, the project should provide the number of parking spaces to meet the total parking demand for each building shown in Table 22.

Table 22
Market Rate Residential Scenario 2: No Shared, With Unbundled Parking Demand

	Scenario 2: No Shared, With Unbundled Parking Required Per Building				
Proposed Market-Rate Residential Building	Residential Parking Demand (spaces)	Retail/Community/ Civic Use Parking Demand (spaces)	Total Parking Demand (spaces)	Proposed Parking Spaces	MPMP Parking Differential
Building R1	340	71	411	354	57
Building R2	383	46	429	337	92
Building R3	230	17	247	244	3
Building R4	77	13	90	92	-2
Building R5	264	22	286	311	-25
Market-Rate Residential Building Total	**1,294**	**169**	**1,463**	**1,338**	**125**

Note:
1. Parking demand for Building R1 include the demand for Ellis Park Community/Civic Use.

Per Scenario 2, the parking demand generated by the residential, retail, and community uses would be 1,463 spaces, which is 125 spaces more than the number of proposed parking spaces (1,338 spaces) in the market-rate residential mixed-use buildings.

Scenario 3: Shared and Unbundled Parking

Shared parking is the use of a parking space to serve two or more individual land uses due to variations in parking demand by hour among differing land uses. Summing the parking demand generated by each use at every hour generally results in an overall peak parking demand for a mixed-use site that is less than the sum of the peak parking demands for each individual use. Thus, the application of the principal of shared parking may reduce the total parking demand for mixed-use developments. Therefore, a shared parking analysis was conducted for the residential buildings R1, R2, R3, R4, and R5 to estimate the parking demand with fully unbundled parking for the residential use and the retail/community/civic use spaces being shared by the residential use at night.

The shared parking analysis is based on time-of-day factors obtained from the Urban Land Institute (ULI) *Shared Parking*, 3rd Edition, recommended parking rate for multi-family residential buildings with unbundled parking, and the retail/community use rate noted above. Appendix I shows the hourly parking demand and total parking demand for each building with shared parking.

With shared parking, the project should provide total parking spaces within each building to meet a parking demand of 0.61 spaces per bedroom for market rate units with unbundled parking. This parking rate is equivalent to 0.85 spaces per unit, which is within the maximum parking allowed of 1 space per studio/1 bedroom unit and 2 spaces per 2 or more-bedroom units in the EWPP. The remainder of the residential parking demand would be accommodated by the retail spaces at night.

Based on the parking rate of 0.85 spaces per multi-family residential unit with unbundled parking and the retail/community use rate noted above, with shared parking, the project should provide the number of parking spaces to meet the total parking demand for each building shown in Table 23.

Table 23
Market Rate Residential Scenario 3: Shared and Unbundled Parking Demand

Proposed Market-Rate Residential Building	Scenario 3: Shared and Unbundled Parking Required Per Building				
	Residential Parking Spaces[2]	Retail/Community/ Civic Use Parking Demand (spaces)[3]	Total Parking Demand (spaces)[1]	Proposed Parking Spaces	MPMP Parking Differential
Building R1	269	71	340	354	-14
Building R2	337	46	383	337	46
Building R3	213	17	230	244	-14
Building R4	64	13	77	92	-15
Building R5	242	22	264	311	-47
Market-Rate Residential Building Total	**1,125**	**169**	**1,294**	**1,338**	**-44**

Notes:
1. Based on the shared parking analysis, total parking demand is the parking demand for the residential use with fully unbundled parking based on 0.85 spaces per unit.
2. Residential spaces = Total spaces - the number of spaces for the retail/community/civic uses
3. Parking demand for Building R1 include the demand for Ellis Park Community/Civic Use.

Per Scenario 3, the parking demand generated by the residential, retail, and community uses would be 1,294 spaces, which is 44 spaces fewer than the number of proposed parking spaces (1,338 spaces) in the residential mixed-use buildings.

Parking for Maude Park

The parking demand that would be generated by the proposed Maude park use was estimated using the 85th percentile parking rate contained in the ITE *Parking Generation Manual*, 5th Edition, for “Soccer Field” (Land Use 488). This was selected based on the anticipated active recreational use of a large 5-acre park. Based on the presence of one soccer field, the weekday rate is 69.65 spaces. This generates an assumed parking demand of at least 70 spaces.

The project does not show any parking for public parks/open space as the park land would be dedicated to and developed by the City. Therefore, a shared parking analysis was conducted for the P1 and P2 district garages to evaluate if parking spaces could be shared between the office and parks outside of the office peak hours. The shared analysis (see Table 24) shows the office parking demand would peak from 10:00 to 11:00 AM on weekdays, and there would be no parking spaces to share at that time. During the rest of the weekday and weekend when the office parking demand is lower, it is expected the available parking spaces in the parking garage would be sufficient to accommodate the parking demand for office and park users. Note, any arrangements for use of parking for park users would require agreement between the applicant and City.

HEXAGON

Table 24
Maude Park Shared Parking Analysis

Hour of Day	Park	Office	Total Demand	Available Spaces to Share
Parking Demand by Hour:				
6 a.m.	1	39	40	1,595
7 a.m.	4	199	203	1,435
8 a.m.	9	719	728	915
9 a.m.	21	1,373	1,394	261
10 a.m.	39	1,634	**1,673**	0
11 a.m.	50	1,454	1,504	180
Noon	62	1,160	1,222	474
1 p.m.	67	1,258	1,325	376
2 p.m.	70	1,552	1,622	82
3 p.m.	67	1,389	1,456	245
4 p.m.	64	1,160	1,224	474
5 p.m.	50	817	867	817
6 p.m.	64	343	407	1,291
7 p.m.	70	203	273	1,431
8 p.m.	70	69	139	1,565
9 p.m.	70	39	109	1,595
10 p.m.	59	13	72	1,621
11 p.m.	36	0	36	1,634
Midnight	8	0	8	1,634
	Parking Requirement[1]		**Max. Demand**	
	70	**1,634**	**1,673**	
P1/P2 Proposed Spaces		**1,634**		

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking
Notes:
1. Parking requirements for the community and park uses are based on the ITE Parking Generation Manual, 5th Edition. It is assumed the office use would occupied all spaces during the peak demand.

Recommended Vehicle Parking Rates

Table 25 provides a summary of the recommended vehicle parking rates for the project. The project should provide 2.0 spaces per 1,000 s.f. for office use, based on the surveyed rates plus the availability of TDM measures, including the GBus employee shuttles. Although the surveyed rate was found to be 2.03 spaces per 1,000 s.f. of office use, the high rate of GBus use is expected to reduce the parking demand, in addition to the close proximity of Middlefield LRT station.

Based on the *ITE Parking Generation Manual*, the project should provide 3.68 spaces per 1,000 s.f. for retail/community/civic uses. For residential uses, based on the State Density Bonus Law, the project qualifies to provide 0.5 spaces per affordable housing unit due to proximity to the Middlefield LRT station. Parking for the market-rate residential units would depend on the parking program:

- Scenario 1 (No Shared, No Unbundled): provide 1 space per unit (equivalent to 0.72 spaces per bedroom), based on the local surveyed rates.
- Scenario 2 (No Shared, With Unbundled): provide 0.85 spaces per unit (equivalent to 0.61 spaces per bedroom), based on the GreenTRIP Parking Database and CAPCOA Handbook.
- Scenario 3 (Shared and Unbundled): provide 0.85 spaces per unit (equivalent to 0.61 spaces per bedroom), based on the ULI *Shared Parking* and Scenario 2 unbundled parking.

Table 25
Recommended Vehicle Parking Rates

Proposed Uses	Size		Recommended Parking Rate	Parking Demand (spaces)	Proposed Spaces
Office	1,317	ksf	2 per ksf[1]	2,634	2,634
Market Rate Residential	1,520	units			1,216
Scenario 1: No Shared, No Unbundled Parking			1.00 per unit[2]	1,520	
Scenario 2: No Shared, With Unbundled Parking			0.85 per unit[3]	1,294	
Scenario 3: Shared and Unbundled Parking			0.85 per unit[3]	1,294	
Affordable Residential	380	units	0.5 per unit[4]	190	304
Retail/Community/Civic Use	50	ksf	3.68 per ksf[5]	184	122

Notes:
1. The parking demand rate for office is based on the MPMP proposed parking rate. Based on the MPMP TDM plan, 31.3 percent of Google employees are expected to use the provided Google GBus service, which is expected to lower the parking demand.
2. Rate per local survey rates conducted by Hexagon in March 2022.
3. Rate per local survey rates conducted by Hexagon in March 2022, and with a 15% reduction for unbundled parking.
4. The State Density Bonus Law requires 0.5 spaces per unit in affordable housing buildings.
5. 85th percentile weekday rates for Shopping Center (Non-December) (Land Use 820) used from ITE Parking Generation Manual, 5th Edition.

Compared to the draft Master Plan, the project provides an adequate number of total parking spaces for office use. Parking proposed for the affordable housing units in R4 aff would be 63 spaces more than what would be required and Building R6 would provide 51 spaces more than what would be required by State Density Bonus Law. Depending on the scenario selected, the project may need to provide additional parking within the mixed-use buildings to accommodate the recommended market-rate residential and retail/community use parking rates identified.

Bicycle Parking

The bicycle parking for the project was evaluated based on the EWPP requirements. The bicycle parking requirements are as follows:

- Residential: one long-term space per unit and one short-term space per 10 units
- Office: one-long term space per 2,000 square feet and one short-term space per 20,000 square feet.
- Commercial Uses: one long-term space and 4 short-term spaces per 5,000 square feet

The requirement for commercial uses were applied to the retail and community/civic uses.

The project will be required to provide the required number of long-term spaces within each building and short-term parking within the plan area near building entrances, shuttle stops, major pathways, and gathering spaces (see Table 26). The project is not required to provide bicycle parking spaces for the park use, as that will be considered as part of the City's park design process.

Table 26
Bicycle Parking Requirements

Proposed Uses	Size		Rate[1] Long-Term	Rate[1] Short-Term	Required Parking Spaces Long-Term	Required Parking Spaces Short-Term
Office Uses						
O1	441.939	ksf	1 per 2 ksf	1 per 10 ksf	221	45
O2	190.000	ksf	1 per 2 ksf	1 per 10 ksf	95	19
O3	310.000	ksf	1 per 2 ksf	1 per 10 ksf	155	31
O4	292.212	ksf	1 per 2 ksf	1 per 10 ksf	146	29
O5/P1	82.849	ksf	1 per 2 ksf	1 per 10 ksf	41	8
Office Total	1,317.000		1 per 2 ksf	1 per 10 ksf	**659**	**132**
Building R1						
Residential	400	units	1 per unit	1 per 10 units	400	40
Retail	18.308	ksf	1 per 5 ksf	4 per 5 ksf	4	15
R1 Total					**404**	**55**
Building R2						
R2	450	units	1 per unit	1 per 10 units	450	45
Retail/Community	12.634	ksf	1 per 5 ksf	4 per 5 ksf	3	10
R2 Total					**453**	**55**
Building R3						
R3	270	units	1 per unit	1 per 10 units	270	27
Retail/Community	4.543	ksf	1 per 5 ksf	4 per 5 ksf	2	4
R3 Total					**272**	**31**
Building R4 Affordable						
R4	210	units	1 per unit	1 per 10 units	210	21
R4 Affordable Total					**210**	**21**
Building R4						
R4	90	units	1 per unit	1 per 10 units	90	9
Retail/Community	3.621	ksf	1 per 5 ksf	4 per 5 ksf	2	3
R4 Total					**92**	**12**
Building R5						
R5	310	units	1 per unit	1 per 10 units	310	31
Retail/Community	5.894	ksf	1 per 5 ksf	4 per 5 ksf	2	5
R5 Total					**312**	**36**
Building R6						
R6	170	units	1 per unit	1 per 10 units	170	17
R6 Total					**170**	**17**
Other						
Community at P2 & Ellis Park	5	ksf	1 per 5 ksf	4 per 5 ksf	2	4
Park	5	acres	--	--	--	--
Other Total					**2**	**4**

Notes:
1. Rates per the City of Mountain View East Whisman Precise Plan.

6. Pedestrian, Bicycle, and Transit Facility Assessment

This Chapter evaluates the effects of the project on the operations of pedestrian and bicycle facilities and transit services in the project vicinity.

The analysis includes an evaluation of the pedestrian access and circulation within the site, access/network between the project site and key nearby destinations, ADA compliance of pedestrian facilities in the project proximity, pedestrian quality of service (PQOS), and the project's consistency with the applicable policies related to pedestrian-oriented designs and elements. The City's PQOS Map was used to identify whether the project trips or design would affect the existing PQOS and whether there are existing pedestrian connection gaps in the project proximity.

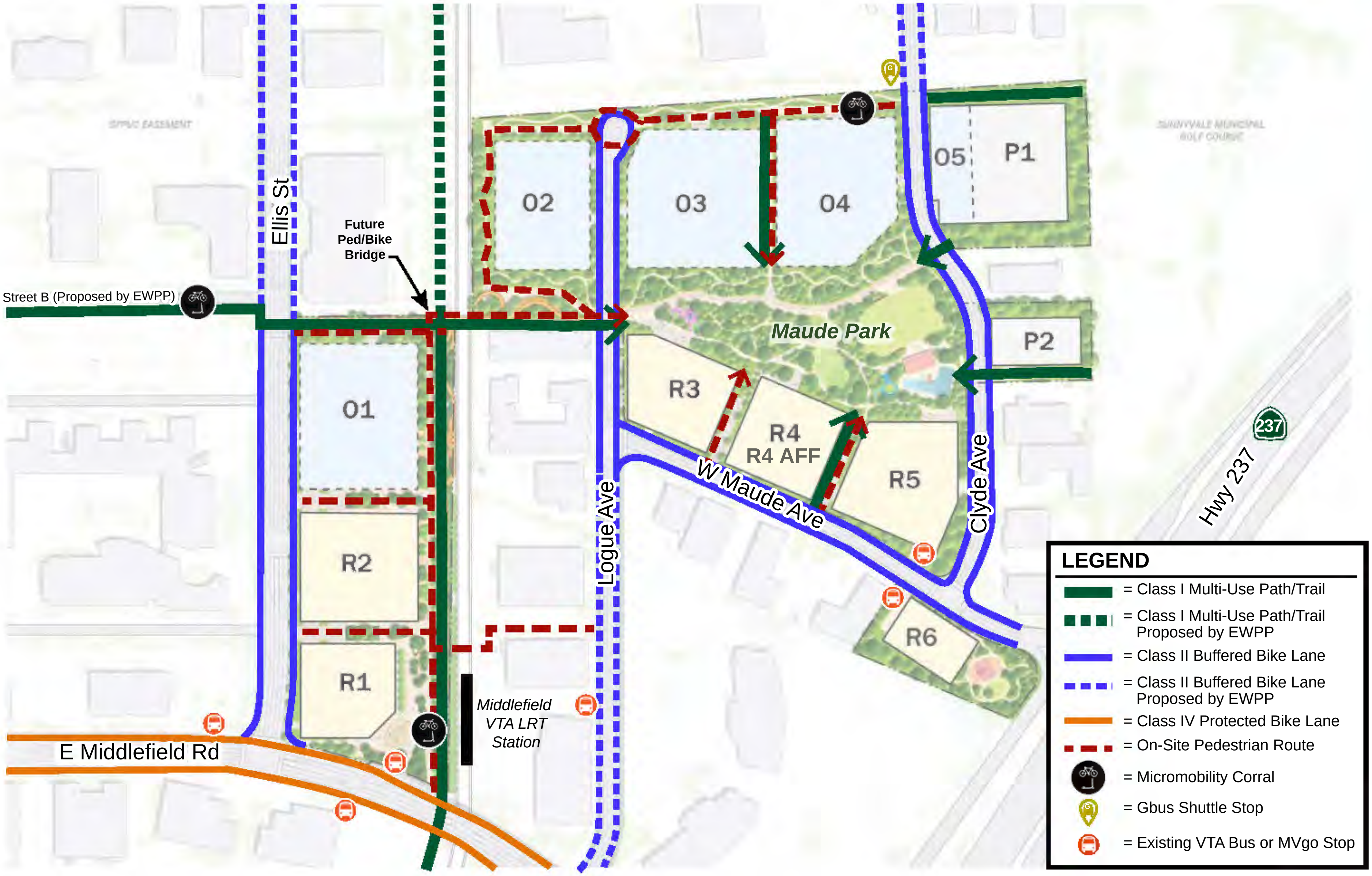
A qualitative analysis of the project's effect on bicycle access, circulation, and operations in the area was conducted. The analysis includes an evaluation of bicycle circulation, bicycle facilities, and access to bicycle parking within the site, bicycle access/network between the project site and key nearby destinations, and bicycle level of traffic stress (BLTS). The City's BLTS Map was used to identify whether the project trips or design would affect the existing BLTS.

A qualitative analysis of the project's effect on transit services/facilities in the area and consistency with the applicable policies related to transit-oriented designs and elements was conducted.

Pedestrian Operations

Pedestrian Access and Circulation

Pedestrian access to the project site is provided via sidewalks on Ellis Street, Logue Avenue, Clyde Avenue, Maude Avenue, Middlefield Road, and surrounding streets. Figure 22 shows the proposed pedestrian and multi-use paths within the plan area that would provide pedestrian connections between the buildings, parks/open spaces, surrounding sidewalks and nearby transit/shuttle stops. An east-west pedestrian and multi-use path would be provided along the north side of building O1 and through Ellis Park to connect pedestrians between Ellis Street, the north-south multi-use path along the LRT tracks, Logue Avenue, and Clyde Avenue. East-west pedestrian routes would also be provided between Ellis Street, the LRT station, and Logue Avenue that would provide access to the LRT Station and north-south multi-use path along the LRT racks. Between Logue Avenue and Clyde Avenue, north-south pedestrian and multi-use paths would connect pedestrians between Maude Avenue, Maude Park, and the service street along the northern boundary of the plan area.



Source: Middlefield Park Master Plan

Figure 22
Proposed Pedestrian and Bicycle Network, Shuttle Stops, and Micromobility Corrals

NORTH
Not to Scale

As previously discussed (see Chapter 4), midblock pedestrian crossings are proposed in various locations: one on Ellis Street at the multi-use path and between buildings R1 and R2, one on Logue Avenue at the multi-use path, two on Clyde Avenue at the multi-use path south of building O4, and one on Middlefield Road at the multi-use path along the LRT racks. These midblock crossings would provide safe crossing for pedestrians traveling through the plan area.

Figure 22 also shows that continuous pedestrian connections would be provided between the project buildings and the proposed bus stops via sidewalks, proposed midblock crossings, and proposed pedestrian and multi-use paths. As discussed in Chapter 3, Google operates an existing Gbus shuttle with an existing stop within the Quad Campus. A second Gbus stop would be added in the plan area within the proposed service street adjacent to Buildings O3 and O4. Access between these hubs and the project buildings would be provided via the proposed midblock crossing, proposed pedestrian/multi-use paths within the plan area, new upgraded bike lanes, and existing sidewalks.

The project would provide 8-foot sidewalks with an additional 6 feet of landscaping between the sidewalk and street along the project frontage on Middlefield Road and along the project frontage on Ellis Street, and 7-foot sidewalks plus 5 feet of landscaping along the project frontage on Logue, Maude, and Clyde Avenues. The updated sidewalks would meet the EWPP street design standards. The new service streets require a minimum 5 feet of sidewalk and a minimum 5 feet of landscaping on either side of the service street, per the EWPP standards.

ADA Compliance

ADA curb ramps are present at all corners of the study intersections where there are crosswalks. Most corners meet current ADA curb ramp designs, such as truncated domes and adequate curb ramp slopes. Truncated domes are the standard design requirement for detectable warnings which enable people with visual disabilities to determine the boundary between the sidewalk and the street.

The following intersections inlcude at least one corner that does not include truncated domes, and the ramp slope of these ramps do not appear to meet the current ADA standard.

- North leg of the Clyde Avenue/Maude Avenue intersection
- North leg of the Logue Avenue/Maude Avenue intersection
- South leg corners at the Ferguson Drive/Middlefield Road intersection
- Southwest corner at the SR 237 Westbound Ramp/Middlefield Road intersection
- South leg of the SR 237 Eastbound Ramp/Middlefield Road intersection

The project would improve the Clyde Avenue/Maude Avenue and Logue Avenue/Maude intersections to inlcude ADA-compliant ramps as part of the street improvements within the plan area.

Pedestrian Infrastructure, Safety, and User Experience

According to the 2012 General Plan, a neighborhood is walkable when people can travel comfortably and safely on foot to many destinations. Convenient walking distance is considered to be a half mile to a mile, a walk that would take 10 to 20 minutes. There are a few restaurants and retail stores on Middlefield Road within a mile of the project site, and the Middlefield LRT Station and bus stops are located within 0.5 miles of all project buildings.

Although located within one mile, access to some of the surrounding land uses and bus stops would require crossing busy arterial streets (Whisman Road and Middlefield Road). The wide streets might be uncomfortable for some pedestrians to cross and would not be considered a quality pedestrian environment. For this reason, the EWPP plans to create a mixed-use area with more commercial uses to be utilized by residents and employees.

The project would implement the EWPP in the project area by providing wider sidewalks along the project frontages on Middlefield Road, Ellis Street, Logue Avenue, Maude Avenue, and Clyde Avenue. It would also provide enhanced midblock crosswalks on Ellis Street, Logue Avenue, and Clyde Avenue at the multi-use trail. And, the project introduces a mix of uses internally that do not require the crossing of major streets to access between buildings, public open space, retail services, and public transit.

Pedestrian Quality of Service

Pedestrian quality of service (PQOS) identifies the level of comfort for pedestrians on any given roadway. Mountain View's Comprehensive Modal Plan (AccessMV), published in May 2021, includes a PQOS map (see Figure 23) that shows continuity or gaps in the pedestrian facilities as indicated with a PQOS score ranging from 1 to 5. A higher PQOS score indicates a low quality of service. The PQOS metric in the AcessMV document covers the following factors:

- Proximity to a variety of destinations and amenities
- Street connectivity and directness of routes to destinations
- Presence of a continuous network of pedestrian facilities
- Motor vehicle traffic speed; and
- Street width and intersection conditions

Based on the PQOS map, the following streets in the project vicinity have a PQOS greater than 2, which is not desirable:

- Ellis Street (PQOS 5)
- Maude Avenue between Logue Avenue and Clyde Avenue (PQOS 4)
- Maude Avenue between Clyde Avenue and the City limit (PQOS 5)
- Logue Avenue (PQOS 4)
- Clyde Avenue (PQOS 5)
- Fairchild Drive (PQOS 5)

The project would have an adverse effect on pedestrian operations because the project is expected to add vehicle trips to these street segments that have a PQOS score of 3 or more.

Because the project is a mixed-use development, it would provide a variety of uses within closer proximity. The project would provide new pedestrian and multi-use paths to provide pedestrians with direct routes to transit/shuttle stops and street segments. The project also would provide enhanced midblock pedestrian crossings to ensure a continuous network of pedestrian facilities across streets. The project would also provide wider sidewalks with landscaping for streets along the project frontages to enhance the pedestrian environment. Taking these factors into account, the project is expected to improve the PQOS along Ellis Street, Clyde Avenue, Maude Avenue, and Logue Avenue within the plan area.

Bicycle Operations

Bicycle Access and Circulation

Bicycle access to the project site is via bike lanes on Middlefield Road, Ellis Street, Logue Avenue, Maude Avenue, and Clyde Avenue. The EWPP proposes to improve these bike lanes to buffered bike lanes. The project would implement Class IV protected bike lanes on Middlefield Road and Class II buffered bike lanes on Ellis Street, Logue Avenue, Maude Avenue, and Clyde Avenue along the project frontages. Class IV bike lanes are separated bike lanes using grade separation, flexible posts, inflexible physical barriers, on street parking, or raised islands.

Source: Access MV, City of Mountain View, 2021

Figure 23
Existing Pedestrian Quality of Service

An east-west multi-use path would be provided through the project between Ellis Street and Clyde Avenue that would connect to the existing multi-use pathway that currently runs through the Quad Office Campus between Whisman Road and Ellis Street, which would provide direct access to the Hetch Hetchy Trail. Multiple north-south multi-use paths are proposed from between Maude Avenue and the service street along the northern boundary of the plan area into Maude Park, which provide a midblock north-south pedestrian connection between Logue Avenue and Maude Avenue, so pedestrians/cyclists would not need to travel to Logue Avenue or Maude Avenue.

The project proposes bike and scooter share hubs (micromobility hubs shown in Figure 22), once permitted by the City of Mountain View, in three locations: near the Quad Campus driveway entrance on Ellis Street (proposed Street B in EWPP), east of building R1 across from the Middlefield LRT stop, and within the service street just north of building O4 at Clyde Avenue. Micromobility hubs would provide dedicated on-site spaces for bike and scooter storage, which would allow the implementation of bike and scooter share programs via the TDM plan. Access between these hubs and the project buildings would be provided via the proposed midblock crossings, proposed pedestrian/multi-use paths within the plan area, and existing sidewalks. These hubs should be well-lit and positioned near (generally within 50 feet) of the main building entrances or at key destinations within the plan area.

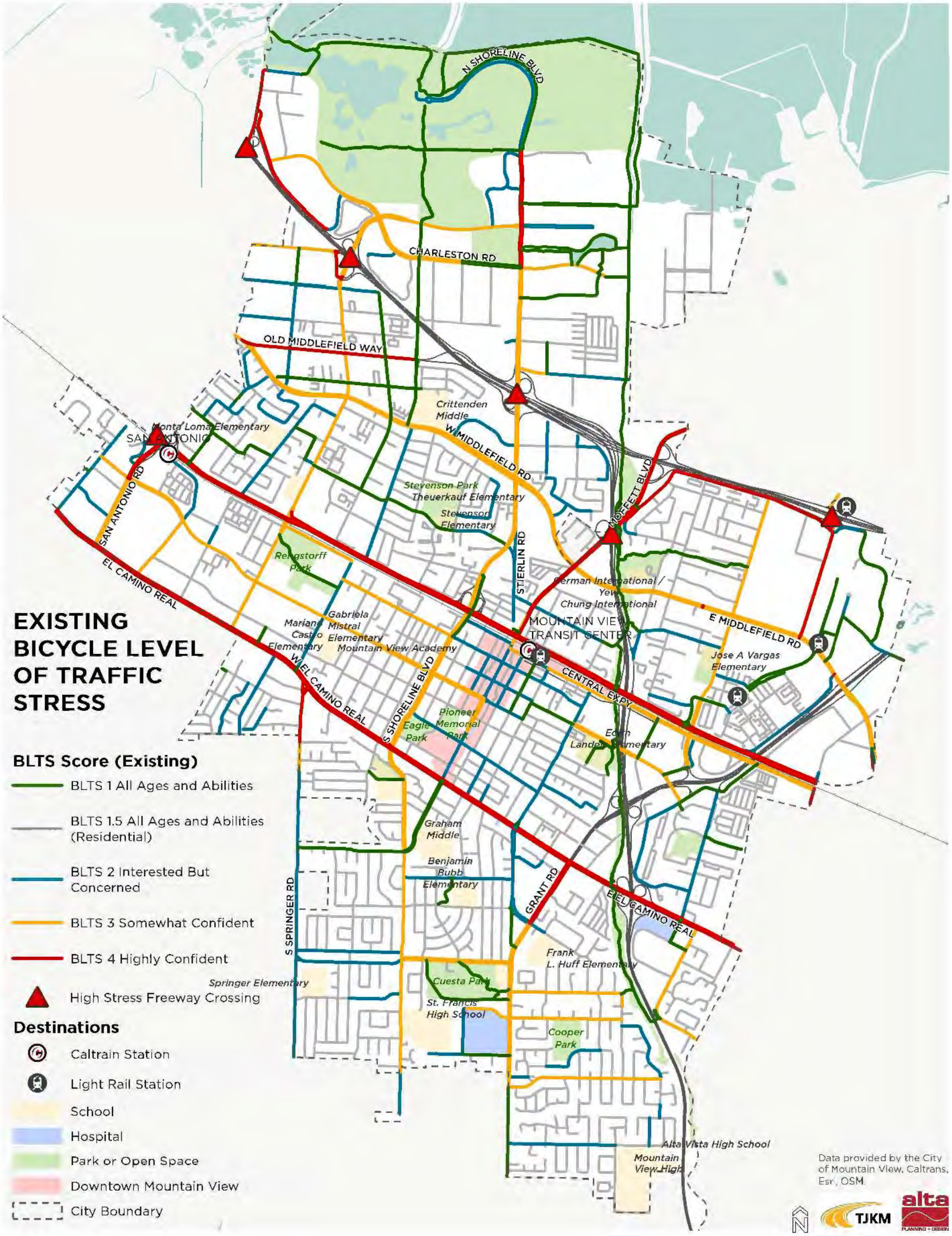
Bicycle Infrastructure, Safety, and User Experience

The 2015 Bicycle Transportation Plan Update evaluates the quality of the bicycle network in the City in terms of connectivity gaps and low stress gaps. The plan identifies spot gaps, connection gaps, and quality gaps along Middlefield Road, Logue Avenue, Ellis Street, and Maude Avenue. Spot gaps refer to point-specific locations lacking dedicated bicycle facilities or other treatments to accommodate safe and comfortable bicycle travel. Connection gaps are missing segments on a clearly defined bikeway, while quality gaps are links of an existing bikeway that are deficient or have operational shortcomings. The plan also identifies the low stress bicycle network. Low stress segments include Class I separated paths and streets with low traffic volumes, low traffic speeds, and bike facilities such as a protected bike lane or a bike boulevard. These are facilities where people feel most comfortable biking because they typically have the least interaction with motor-vehicles. Fairchild Drive, Manila Drive, the Hetchy Hetch Trail, and the Stevens Creek Trail are considered low stress segments. Although there are bike lanes on Ellis Street, Logue Avenue, Clyde Avenue, Maude Avenue, and Middlefield Road in the project area, none of these streets are classified as low stress bicycle facilities. However, the project would construct multi-use paths (Class I Bikeway) within the area to provide safer and direct connections for bicycles between Ellis Street and Clyde Avenue and between Middlefield Road, Maude Avenue, and the office buildings O3, O4 and O5 without riding on the streets. The project would also improve the existing bike lanes by providing buffered/protected bike lanes along the project frontage.

Bicycle Level of Traffic Stress

The City's AcessMV report includes a bicycle level of traffic stress (BLTS) map (see Figure 24) to identify the perceived comfort and safety of existing roads and bikeway facilities from the perspective of cyclists, as indicated with a BLTS score ranging from 1 to 4. A higher BLTS score indicates that the bikeway is comfortable for a more confident adult. A BLTS score of 1 is comfortable for all ages and abilities, a BLTS score of 2 is comfortable for an average adult, while a BLTS score of 4 indicates that the streets are comfortable only for highly confident riders. The metric (ranging from 1 to 4) in the AcessMV document covers the following factors:

- Number of through lanes or street width
- Posted speed limit or prevailing vehicle speed
- Presence and type of bicycle facilities
- Presence of traffic signals
- Presence of crossing islands



Source: Access MV, City of Mountain View, 2021

Figure 24
Existing Bicycle Level of Traffic Stress

Based on the BLTS map, the following streets in the project vicinity have a BLTS greater than 2, which is undesirable:

- Ellis Street (BLTS 4)
- Middlefield Road (BLTS 3)

The project would create an adverse effect on bicycle operations, as the project is expected to add vehicle trips to these streets.

The AccessMV report also includes a BLTS map considering the planned bicycle facilities listed in the Caltrans District 4 Bike Plan (2018), the VTA Countywide Bicycle Plan (2018), the City of Mountain View Bicycle Transportation Plan (2014), the Caltrain Bicycle Access and Parking Plan (2008), and several area precise plans, including the EWPP. With the planned improvements identified in these documents, Ellis Street is expected to continue to have a BLTS score of 4 and Middlefield Road would have a BLTS score of 3. All other streets in the EWPP area would continue to have a BLTS score of 2 or lower.

The project would improve the bike lanes along the project frontage on Ellis Street, Logue Avenue, Clyde Avenue, and Maude Avenue to buffered bike lanes and protected bike lanes on Middlefield Road. Implementing the buffered/protected bike lanes on Ellis Street and Middlefield Road is expected to lower the BLTS score, as protected bike lanes would provide more space between vehicular traffic and bicyclists.

Pedestrian and Bicycle Access to Schools

The project is located within the boundary of Theuerkauf Elementary School, Crittenden Middle School, and Mountain View High School, which are about 1.7 miles northwest, 2.0 miles northwest, and 4.9 miles south of the plan area, respectively. According to the City of Mountain View's Suggested Routes to Schools Program, middle school students that wish to bike to school could use Walker Drive, Stevens Creek Trail, Central Avenue, Montecito Avenue, and Farley Street to get to the school. High school students could use the Stevens Creek Trail and local streets from the project area to school.

Transit Operations

Transit Facilities, Service, and Access

The project area is served by VTA Route 21 and MVgo Route A with the closest bus stops located on Middlefield Road and Maude Avenue. The project also is served by the Middlefield LRT Station, which is considered a major transit stop. The project would enhance and provide shorter access to the transit stops by providing pedestrian and multi-use paths within the plan area. The project would also enhance existing bus stops on site frontages by providing shelters and benches, as required by VTA.

Google operates an existing GBus shuttle system with an existing stop within the Quad Campus. A second GBus stop would be added in the plan area within the proposed service street adjacent to Buildings O3 and O4. Access between these hubs and the project buildings would be provided via the proposed midblock crossing, proposed pedestrian/multi-use paths within the plan area, and existing sidewalks.

Transit Ridership

According to the VTA TIA Guidelines, nine percent of residents in housing within 2,000 feet of an LRT station are expected to utilize transit, which calculates to 59 new riders during the AM peak hour and 71 new riders during the PM peak hour. Because Google operates its GBus shuttles for employees as a long-haul commute option, the number of office workers that would take VTA transit to commute is expected to be minor. Office employees who are VTA transit riders will likely be traveling a short distance between the Mountain View Transit Center (in Downtown) to the Middlefield LTR station.

During the AM and PM peak hours, there are three light rail trains that run in each direction, two Route 21 buses that run in each direction, and two MVgo shuttles that run northbound in the morning and southbound in the afternoon/evening. The increase in ridership could be accommodated by the existing transit routes.

Transit Vehicle Delay

To assess the project's effect on transit vehicle delay, the delay experienced by each route running through the study intersections was estimated based on the average vehicle delay that is calculated as part of the intersection level of service analysis. Table 27 summarizes the bus travel times through the study area and the increase in transit vehicle delay with the addition of the project traffic. VTA has not established policies or significance criteria related to transit vehicle delay. Therefore, this analysis is presented for information purposes only. The results show that the project would result in a minimal increase (less than 60 seconds per vehicle) in transit travel time for the bus routes in the study area.

Table 27
Transit Vehicle Delay in Study Area

Bus Route	Study Area Street(s)	Direction	Projected Change in Transit Vehicle Delay (sec/veh) AM	PM
21	Moffett Blvd, Middlefield Rd, Logue Ave, Maude Ave, Mathilda Ave	Eastbound Westbound	1.2 -3.8	36.1 25.9
MVgo Route A	Whisman Rd, Fairchild Dr, Clyde Ave, Maude Ave, Logue Ave, Middlefield Rd	--	4.7	4.4

Note:
Projected increase in transit delay based on a comparison of background vs. background plus project intersection movement delays calculated by TRAFFIX.

7. Other Transportation Issues

This chapter presents other transportation issues associated with the project, including:

- EWPP Street C Removal
- Recommended Changes to the MPMP
- Construction Phasing
- Project Contribution to the EWPP

EWPP Street C Removal

The EWPP proposes a Street C that extends midblock between Logue Avenue and Clyde Avenue from Maude Avenue northward to the Hetch Hetchy right of way and ends in a cul-de-sac (see Figure 25). Street C was conceptualized in EWPP to serve as an additional access to new buildings to break-up the long Maude Avenue block and provide a point of pedestrian connectivity near a new neighborhood park. The EWPP describes that, with a Master Plan application, the City can review a proposed circulation network that does not include Street C if findings can be made that the street is not necessary for vehicle circulation or utilities.

Because Street C would end in a cul-de-sac, it would not serve through traffic and would only serve properties on the new street. The project would provide direct access to the proposed buildings in the area bounded by Logue, Maude, and Clyde Avenues through Maude Avenue (buildings R3, R4/R4 aff, R5, and R6), Clyde Avenue (buildings O5/P1 and P2), and the service street running along the northern boundary (buildings O2, O3, and O4). Therefore, Street C is not necessary for vehicular access to these buildings. Although Street C would provide pedestrian/bicycle midblock access between Maude Avenue and the Hetch Hetchy easement, the project would also provide north-south public multi-use paths from Maude Avenue to the service street along the north project boundary into a new neighborhood park (Maude Park). Thus, Street C is not necessary for vehicular and pedestrian circulation. Replacing Street C with public multi-use paths is consistent with the EWPP as it maintains approximately 300-to-400-foot block lengths and would provide more connections for pedestrians and bicyclists with the service streets than a single Street C would provide.

Source: Middlefield Park Master Plan

Figure 25
Street C Proposed by EWPP

Recommended Changes to the MPMP

Table 28 summarized the recommended changes to the MPMP based on the analysis and evaluation discussed in Chapters 4 and 5.

Table 28
Recommended Changes to Draft MPMP

Element	Recommended Changes from MPMP
Midblock Crossing	Ellis Street Crossing north of Building O1: Provide a traffic signal on Ellis Street at the Quad Campus driveway and move the crossing to the south leg of the intersection. Eliminate the existing Ellis Street crossing north of the Quad Campus driveway. Middlefield Road Crossing at the LRT tracks: Signalize the crossing. Interconnect and coordinate the preemptive pedestrian signal with the signal at Logue Avenue and Middlefield Road. Logue Avenue Crossing north of Building R3: Provide an active crosswalk with RRFB and install infrastructure (e.g. conduits, lighting, etc.) to facilitate the installation of a future signal. Clyde Avenue Crossing south of Building O5/P1: Install a signalized crosswalk at least 100 feet from the driveway to Building O5/P1. Clyde Avenue Crossing north of Building R5: Install an active crosswalk with RRFB at the P2 driveway, at least 300 feet from the Clyde Avenue Crossing south of Building O5/P1.
Service Street/ Driveway	Provide 15 feet of red curbs next to the service streets/driveways if parking is permitted on the roadways. Align the O5/P1 driveway with the service street north of Buildings O3 and O4 to create an intersection.
Flex Zones	Move the on-street flex zones for O3, O4, O5, R3, R4, and R5 to the service street/private driveway for the respective buildings.
Removal of On-Street Parking	East side of Logue Avenue, north side of Maude Avenue, and east side of Clyde Avenue. Removal of parking at R6 street frontage.
Vehicle Parking Ratios	Determine residential parking requirement based on unbundled and shared parking management. Retail/community/civic uses based on 3.68 spaces per 1,000 sf.

Construction Phasing

The project would be constructed in four phases (see Table 29). Phase 1 would construct buildings R1, R2, and R6. Phase 2 would include constructing buildings O1 and O2. Phase 3 would construct buildings R3, R4/R4 aff, and R5. Under Phase 3, Maude Park is intended to be dedicated or delivered. Phase 4 would construct buildings O3, O4, O5/P1, and P2. Roadway improvements along Middlefield Road should occur during Phase 1, depending on the timing of other improvements planned in later phases. Logue Avenue would be extended to serve building O2 and the roadway and intersection improvements along Ellis Street are planned under Phase 2. Roadway improvements along Logue and Maude Avenues would occur in Phase 3, with Maude Avenue improvements potentially moved to Phase 4 depending on timing of Phase 4. Finally, Phase 4 would include Clyde Avenue roadway and midblock crossing improvements. Based on the buildings and roadway improvements planned for each phase, Table 29 summarizes the midblock crossings and new traffic signals that should be built in each phase.

Construction parking and staging would be located near each building during each phase, with some off-site locations for parking. Trucks would access the construction areas using arterial streets, such as Ellis Street, Middlefield Road, Logue Avenue, and Maude Avenue (see Figure 26) with nearby freeway access for SR 237 and US 101. Two additional sites (in the northeast corner of Clyde Avenue and Maude Avenue and north of Building O4 on Clyde Avenue) are proposed to be used during construction, which are not part of the Master Plan area. On-site vehicle parking is expected to be sufficient for existing uses and construction crews during each phase of construction. The project would be conditioned to prepare and submit a construction management plan during each building permit stage that addresses the construction schedule, street closures and/or detours, construction staging areas, parking, and the planned truck routes. Use of any city-owned land (future parks) for construction staging or parking would require a license agreement with the City.

Table 29
Construction Phase Improvments

Phase	Construction
Phase 1	Buildings R1, R2, and R6 Middlefield Road roadway improvements[1] Middlefield Road Midblock Crossing at the LRT tracks (signal) VTA bus duck-out modifications
Phase 2	Buildings O1 and O2 Logue Avenue extension Ellis Street roadway and intersection improvements Ellis Street Midblock Crossing north of Building O1 (signal) Signal at the O1/R2 service street on Ellis Street
Phase 3	Buildings R3, R4/R4 affordable, and R5 Logue Avenue roadway improvements Logue Avenue Midblock Crossing north of Building R3 (active crosswalk with RRFB) Maude Avenue roadway improvements[2]
Phase 4	Buildings O3, O4, O5/P1, and P2 Clyde Avenue roadway improvements Clyde Avenue Midblock Crossing south of Building O5/P1 (signal) Clyde Avenue Midblock Crossing north of Building R5 (active crosswalk with RRFB)

Notes
1. Improvements along Middlefield Road could potentially occur during Phase 1, depending on the timing of other improvements planned in later phases.
2. Maude Avenue improvements could be combined with Phase 4, depending on timing of Phase 4 development.

Source: Middlefield Park Master Plan

Figure 26
Construction Phasing

Project Contribution to the EWPP

The EWPP envisions a variety of housing, retail, open space, and office uses, including the land uses proposed by the Middlefield Park project. Implementation of the EWPP would result in adverse operational effects at several study intersections and would require intersection improvements to address the adverse effects. Because the project would contribute trips to the EWPP, the project should contribute its fair share to the improvements recommended by the EWPP EIR. The intersection improvements recommended by the EWPP EIR and percentage of the MPMP's contributions are shown in Table 30.

The project's contribution to the EWPP recommended improvements were calculated based on the proportion of trips generated by the project to the total EWPP trips. The AM and PM peak-hour proportions were averaged to determine the overall project contribution per intersection. The number of trips generated by the EWPP are the same under existing, background, and cumulative conditions. Should the city adopt an East Whisman Development Impact Fee (currently under review) that includes the listed improvements, the project may be able to pay their fair share in fee.

Table 30
EWPP Intersection Improvements and Project Contributions

ID	Intersection	Improvement[1]	Peak Hour	Project Trips	EWPP Deficiency Scenario	Project Contribution
1	Ellis Street and Manila Drive	Signalize intersection with a protected left turn lane and shared through/right lane for each approach	AM PM	30 36	Background, Cumulative	14%
2	Ellis Street and US 101 NB Ramps	Add westbound left and southbound right lanes with overlap signal phasing[2]	AM PM	249 198	Background, Cumulative	--
4	Ellis Street and Fairchild Drive	Convert southbound approach to 2 through lanes[2]	AM PM	401 431	Cumulative	--
5	SR 237 Ramps and Maude Avenue	Redesign the interchange to a tight diamond configuration[3]	AM PM	383 364	Cumulative	--
6	Mary Avenue and Maude Avenue	Add dedicated eastbound right lane with overlap signal phasing[4]	AM PM	134 138	Cumulative	22%
7	Mathilda Avenue and Maude Avenue*	No feasible improvement identified	AM PM	117 121	Cumulative	--
8	Moffett Boulevard and Middlefield Road	Add dedicated northbound right, southbound right, and eastbound right lanes with overlap signal phasing	AM PM	85 96	Cumulative	16%
10	Whisman Road and Middlefield Road	Add dedicated eastbound right lane with overlap signal phasing	AM PM	131 171	Cumulative	18%
11	Ellis Street and Middlefield Road	Add second eastbound left lane	AM PM	283 364	Cumulative	45%
17	Moffett Boulevard and Central Expressway*	Close Castro Street leg at Evelyn Avenue, as identified in the *Mountain View Transit Center Master Plan (2016)*[4]	AM PM	64 68	Cumulative	10%
18	SR 85 SB Off Ramp/Central Expressway	Convert southbound right lane to shared southbound left/right lane[5]	AM PM	30 30	Cumulative	38%
21	Mary Avenue and Central Expressway*	Add second westbound left, third westbound through, and third eastbound thorugh lanes[4]	AM PM	41 35	Existing, Background, Cumulative	10%
22	Mathilda Avenue and Indio Avenue	Add dedicated westbound right lane with overlap signal phasing[4]	AM PM	71 68	Cumulative	20%
23	Whisman Road and SR 237 WB Ramps	Add dedicated southbound left and westbound right lanes with overlap signal phasing[5]	AM PM	23 18	Cumulative	5%

Notes:
* Indicates CMP intersection
1. Improvements as listed in the EWPP EIR under existing plus project, background plus project, and cumulative plus project conditions.
2. This improvement is considered infeasible due to several considerations, including right-of-way, funding constraints, the limited space under the existing bridge structure to accommodate vehicle, bicycle, and pedestrian use, and a need to accommodate light rail and freight rail traffic.
3. The interchange is part of the State highway system, which is under the jurisdiction of Caltrans. There are no feasible improvements completely under the City's control.
4. The implementation of this improvement is uncertain because this intersection is not under the City of Mountain View's jurisdiction.
5. This improvement would require coordination with Caltrans and Santa Clara County.

Middlefield Park Master Plan
VMT and MTA

Technical Appendices

April 13, 2022

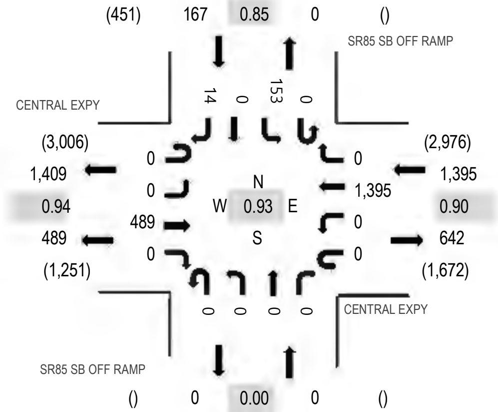
Appendix A

Traffic Counts

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

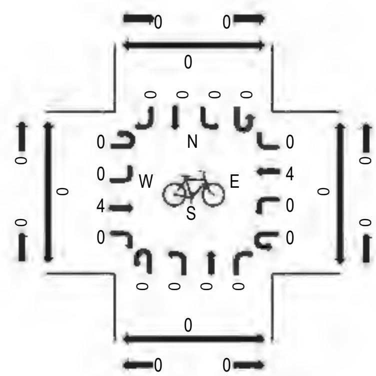
Location: 4 SR85 SB OFF RAMP & CENTRAL EXPY AM
Date: Tuesday, September 28, 2021
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - Motorized Vehicles

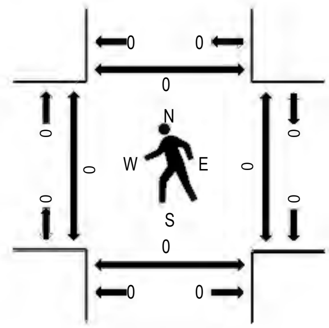


Note: Total study counts contained in parentheses.

Peak Hour - Bicycles



Peak Hour - Pedestrians



Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	SR85 SB OFF RAMP Northbound U-Turn	Left	Thru	Right	SR85 SB OFF RAMP Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	0	54	0	0	0	151	0	0	0	0	0	0	19	0	0	224	1,382	0	0	0	0
7:15 AM	0	0	56	0	0	0	163	0	0	0	0	0	0	22	0	2	243	1,621	0	0	0	0
7:30 AM	0	0	77	0	0	0	259	0	0	0	0	0	0	33	0	2	371	1,928	0	0	0	0
7:45 AM	0	0	116	0	0	0	388	0	0	0	0	0	0	37	0	3	544	2,051	0	0	0	0
8:00 AM	0	0	104	0	0	0	316	0	0	0	0	0	0	36	0	7	463	2,047	0	0	0	0
8:15 AM	0	0	139	0	0	0	370	0	0	0	0	0	0	39	0	2	550	1,979	0	0	0	0
8:30 AM	0	0	130	0	0	0	321	0	0	0	0	0	0	41	0	2	494	1,744	0	0	0	0
8:45 AM	0	0	123	0	0	0	362	0	0	0	0	0	0	52	0	3	540	1,521	0	0	0	0
9:00 AM	0	0	131	0	0	0	220	0	0	0	0	0	0	44	0	0	395	1,249	0	0	0	0
9:15 AM	0	0	110	0	0	0	160	0	0	0	0	0	0	42	0	3	315		0	0	0	0
9:30 AM	0	0	115	0	0	0	126	0	0	0	0	0	0	28	0	2	271		0	1	0	0
9:45 AM	0	0	96	0	0	0	140	0	0	0	0	0	0	28	0	4	268		0	0	0	0

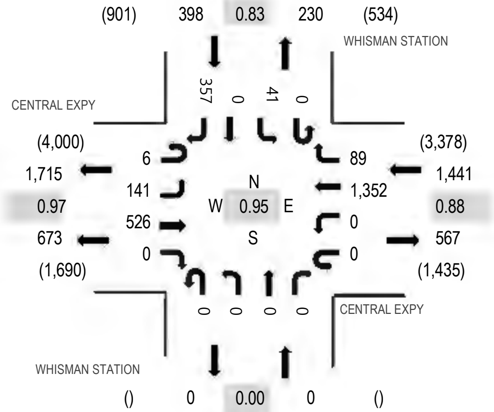
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	9
Lights	0	0	483	0	0	0	1,385	0	0	0	0	0	0	152	0	14	2,034
Mediums	0	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	8
Total	0	0	489	0	0	0	1,395	0	0	0	0	0	0	153	0	14	2,051

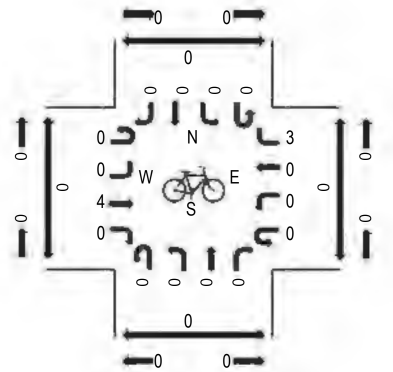
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 WHISMAN STATION & CENTRAL EXPY AM
Date: Tuesday, September 28, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

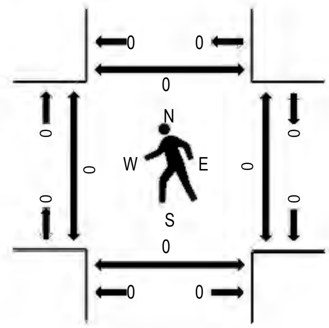
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	WHISMAN STATION Northbound U-Turn	Left	Thru	Right	WHISMAN STATION Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	16	61	0	0	0	158	10	0	0	0	0	0	4	0	26	275	1,664	0	0	0	0
7:15 AM	1	16	61	0	0	0	172	7	0	0	0	0	0	3	0	33	293	1,967	0	0	0	0
7:30 AM	2	30	69	0	0	0	277	15	0	0	0	0	0	2	0	57	452	2,299	0	0	0	0
7:45 AM	2	38	116	0	0	0	328	20	0	0	0	0	0	14	0	126	644	2,511	0	0	0	0
8:00 AM	1	25	120	0	0	0	284	21	0	0	0	0	0	13	0	114	578	2,512	0	0	0	0
8:15 AM	1	43	134	0	0	0	315	21	0	0	0	0	0	8	0	103	625	2,504	0	0	0	0
8:30 AM	2	26	141	0	0	0	387	23	0	0	0	0	0	7	0	78	664	2,324	0	0	0	0
8:45 AM	2	47	131	0	0	0	366	24	0	0	0	0	0	13	0	62	645	2,064	0	0	0	0
9:00 AM	3	33	135	0	0	0	280	16	0	0	0	0	0	10	0	93	570	1,793	0	0	0	0
9:15 AM	3	30	128	0	0	0	221	11	0	0	0	0	0	12	0	40	445		0	0	0	0
9:30 AM	1	17	120	0	0	0	210	16	0	0	0	0	0	10	0	30	404		0	0	0	0
9:45 AM	2	18	115	0	0	0	185	11	0	0	0	0	0	8	0	35	374		0	0	0	0

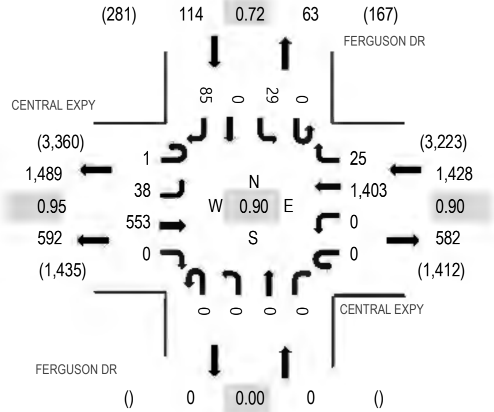
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6
Lights	6	140	519	0	0	0	1,336	89	0	0	0	0	0	41	0	354	2,485
Mediums	0	1	3	0	0	0	14	0	0	0	0	0	0	0	0	3	21
Total	6	141	526	0	0	0	1,352	89	0	0	0	0	0	41	0	357	2,512

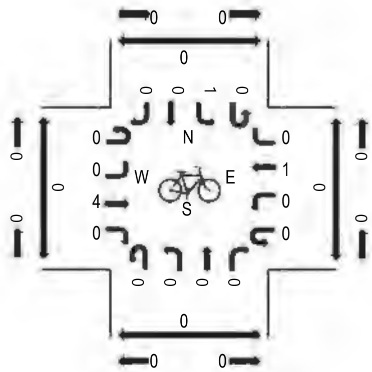
(303) 216-2439
www.alltrafficdata.net

Location: 6 FERGUSON DR & CENTRAL EXPY AM
Date: Tuesday, September 28, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

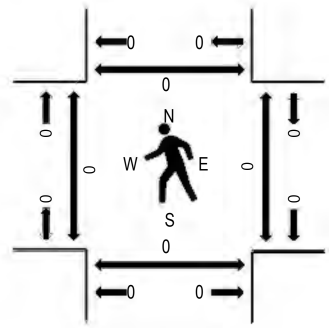
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	FERGUSON DR Northbound U-Turn	Left	Thru	Right	FERGUSON DR Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	3	66	0	0	0	179	0	0	0	0	0	0	2	0	5	255	1,411	0	0	0	0
7:15 AM	0	4	57	0	0	0	175	5	0	0	0	0	0	0	0	12	253	1,623	0	0	0	0
7:30 AM	0	5	82	0	0	0	350	7	0	0	0	0	0	6	0	12	462	1,889	0	0	0	0
7:45 AM	0	7	103	0	0	0	278	11	0	0	0	0	0	5	0	37	441	1,983	0	0	0	0
8:00 AM	1	4	136	0	0	0	297	7	0	0	0	0	0	5	0	17	467	2,134	0	0	0	0
8:15 AM	0	10	137	0	0	0	343	2	0	0	0	0	0	6	0	21	519	2,121	0	0	0	0
8:30 AM	0	14	131	0	0	0	372	9	0	0	0	0	0	10	0	20	556	1,964	0	0	0	0
8:45 AM	0	10	149	0	0	0	391	7	0	0	0	0	0	8	0	27	592	1,710	0	0	0	0
9:00 AM	1	11	144	0	0	0	263	6	0	0	0	0	0	8	0	21	454	1,394	0	0	0	0
9:15 AM	0	5	130	0	0	0	196	8	0	0	0	0	0	10	0	13	362		0	0	0	0
9:30 AM	1	6	112	0	0	0	153	7	0	0	0	0	1	10	0	12	302		0	0	0	0
9:45 AM	0	15	91	0	0	0	154	3	0	0	0	0	0	4	0	9	276		0	0	0	0

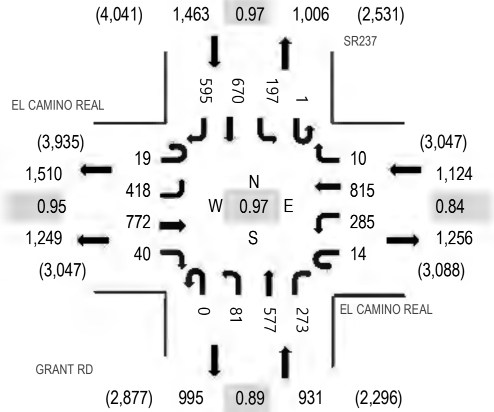
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	1	9
Lights	1	36	549	0	0	0	1,395	25	0	0	0	0	0	29	0	78	2,113
Mediums	0	2	0	0	0	0	4	0	0	0	0	0	0	0	0	6	12
Total	1	38	553	0	0	0	1,403	25	0	0	0	0	0	29	0	85	2,134

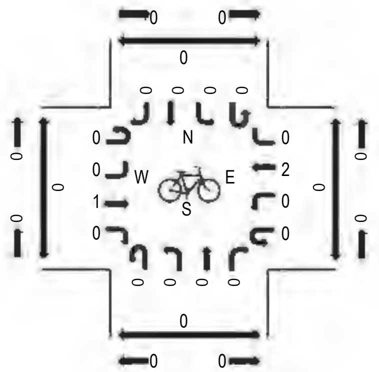
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 9 GRANT RD & EL CAMINO REAL AM
Date: Tuesday, September 28, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

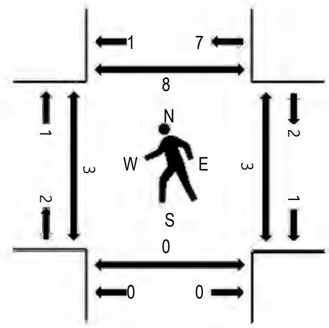
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EL CAMINO REAL Eastbound U-Turn	Left	Thru	Right	EL CAMINO REAL Westbound U-Turn	Left	Thru	Right	GRANT RD Northbound U-Turn	Left	Thru	Right	SR237 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	50	82	7	0	38	118	3	0	7	69	25	0	43	100	78	620	3,545	0	0	0	0
7:15 AM	0	53	79	6	0	53	146	3	0	12	81	31	0	40	184	107	795	4,101	0	2	0	2
7:30 AM	5	75	153	2	2	61	149	5	1	15	112	35	0	42	185	124	966	4,463	0	3	0	1
7:45 AM	1	81	165	5	0	98	266	2	0	16	126	64	0	39	168	133	1,164	4,722	2	0	0	0
8:00 AM	5	95	193	10	1	74	227	3	0	18	126	78	0	36	152	158	1,176	4,767	1	0	0	3
8:15 AM	1	115	188	7	4	72	199	4	0	15	142	51	0	56	168	135	1,157	4,722	0	1	0	2
8:30 AM	5	97	217	11	3	76	192	3	0	22	148	69	1	48	180	153	1,225	4,609	2	0	0	0
8:45 AM	8	111	174	12	6	63	197	0	0	26	161	75	0	57	170	149	1,209	4,325	0	2	0	3
9:00 AM	4	105	151	11	8	73	195	8	1	24	132	54	0	41	169	155	1,131	4,119	1	1	1	0
9:15 AM	0	107	165	11	8	79	141	9	1	22	101	47	0	54	172	127	1,044		2	2	0	1
9:30 AM	0	87	133	15	4	63	140	0	0	28	109	47	3	49	140	123	941		1	2	0	0
9:45 AM	3	74	159	9	5	74	170	2	0	14	128	63	0	44	156	102	1,003		5	3	0	4

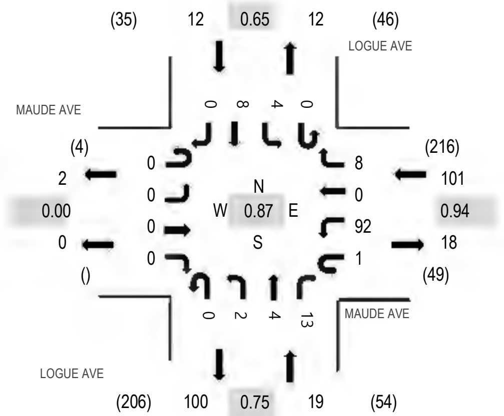
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	7	0	0	0	1	0	0	0	0	1	0	0	3	1	4	17
Lights	19	407	761	40	14	284	807	9	0	81	574	270	1	193	667	584	4,711
Mediums	0	4	11	0	0	0	8	1	0	0	2	3	0	1	2	7	39
Total	19	418	772	40	14	285	815	10	0	81	577	273	1	197	670	595	4,767

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

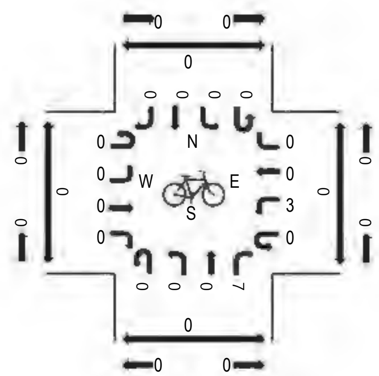
Location: 10 LOGUE AVE & MAUDE AVE AM
Date: Tuesday, September 28, 2021
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

Peak Hour - Motorized Vehicles

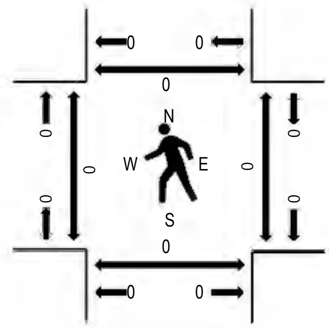


Note: Total study counts contained in parentheses.

Peak Hour - Bicycles



Peak Hour - Pedestrians



Traffic Counts - Motorized Vehicles

Interval Start Time	MAUDE AVE Eastbound U-Turn	Left	Thru	Right	MAUDE AVE Westbound U-Turn	Left	Thru	Right	LOGUE AVE Northbound U-Turn	Left	Thru	Right	LOGUE AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	0	0	0	0	8	0	2	0	0	2	2	1	0	1	0	16	78	0	0	0	0
7:15 AM	0	0	0	0	0	8	0	5	0	0	3	2	1	1	2	0	22	90	0	1	0	0
7:30 AM	0	0	0	0	0	11	0	2	0	0	1	1	0	1	1	0	17	101	1	0	0	1
7:45 AM	0	0	0	0	0	11	1	2	0	0	1	4	0	2	2	0	23	113	1	0	0	1
8:00 AM	0	0	0	0	0	22	0	1	0	0	0	3	0	0	2	0	28	122	1	0	0	0
8:15 AM	0	0	0	0	0	25	0	2	0	2	2	1	0	1	0	0	33	132	0	0	0	0
8:30 AM	0	0	0	0	1	23	0	0	0	0	0	1	0	1	3	0	29	118	0	0	0	0
8:45 AM	0	0	0	0	0	21	0	3	0	0	2	3	0	1	2	0	32	114	0	0	0	0
9:00 AM	0	0	0	0	0	23	0	3	0	0	0	8	0	1	3	0	38	105	0	0	0	0
9:15 AM	0	0	0	0	0	11	1	1	0	0	0	4	0	1	1	0	19		0	0	0	0
9:30 AM	0	0	0	0	0	11	0	6	0	0	2	4	0	1	1	0	25		0	0	0	0
9:45 AM	0	0	0	0	0	9	0	3	0	0	1	5	0	0	5	0	23		0	0	0	0

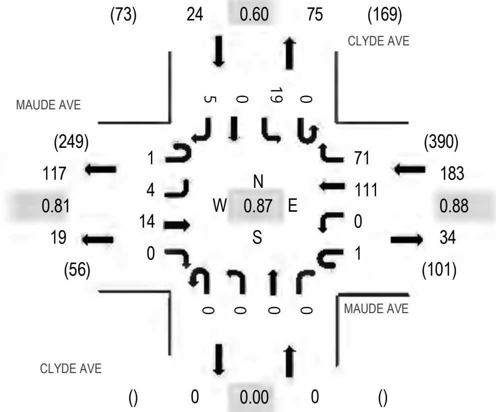
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	1	90	0	8	0	2	4	11	0	4	8	0	128
Mediums	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	4
Total	0	0	0	0	1	92	0	8	0	2	4	13	0	4	8	0	132

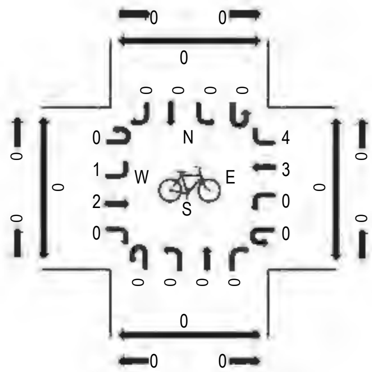
(303) 216-2439
www.alltrafficdata.net

Location: 11 CLYDE AVE & MAUDE AVE AM
Date: Tuesday, September 28, 2021
Peak Hour: 08:15 AM - 09:15 AM
Peak 15-Minutes: 09:00 AM - 09:15 AM

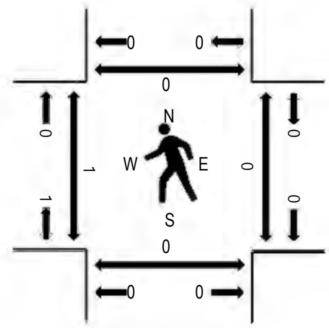
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAUDE AVE Eastbound U-Turn	Left	Thru	Right	MAUDE AVE Westbound U-Turn	Left	Thru	Right	CLYDE AVE Northbound U-Turn	Left	Thru	Right	CLYDE AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	1	1	0	0	0	9	14	0	0	0	0	0	0	0	1	26	128	0	0	0	0
7:15 AM	0	0	2	0	0	0	14	10	0	0	0	0	0	2	0	2	30	156	0	0	0	0
7:30 AM	0	2	3	0	0	0	10	9	0	0	0	0	0	7	0	1	32	188	0	0	0	0
7:45 AM	0	1	2	0	0	0	19	12	0	0	0	0	0	4	0	2	40	199	0	0	0	0
8:00 AM	0	1	4	0	0	0	22	15	0	0	0	0	0	8	0	4	54	215	0	0	0	0
8:15 AM	0	0	5	0	1	0	29	22	0	0	0	0	0	4	0	1	62	226	1	0	0	0
8:30 AM	0	1	0	0	0	0	28	13	0	0	0	0	0	1	0	0	43	204	0	0	0	0
8:45 AM	0	1	3	0	0	0	26	13	0	0	0	0	0	10	0	3	56	199	0	0	0	0
9:00 AM	1	2	6	0	0	0	28	23	0	0	0	0	0	4	0	1	65	176	0	0	0	0
9:15 AM	0	2	3	0	0	0	18	9	0	0	0	0	0	7	0	1	40		2	0	0	0
9:30 AM	0	1	8	0	0	0	17	7	0	0	0	0	0	5	0	0	38		0	0	0	0
9:45 AM	0	0	6	0	1	0	11	10	0	0	0	0	0	4	0	1	33		0	0	0	0

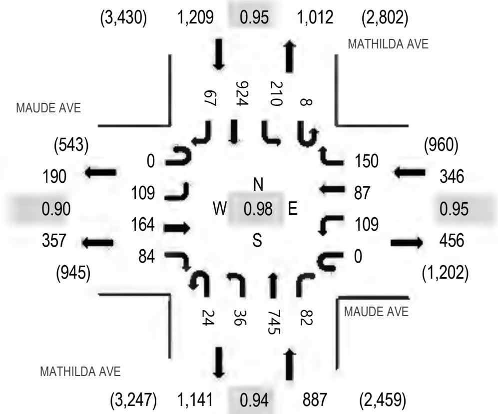
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Lights	1	4	12	0	1	0	108	71	0	0	0	0	0	19	0	5	221
Mediums	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4
Total	1	4	14	0	1	0	111	71	0	0	0	0	0	19	0	5	226

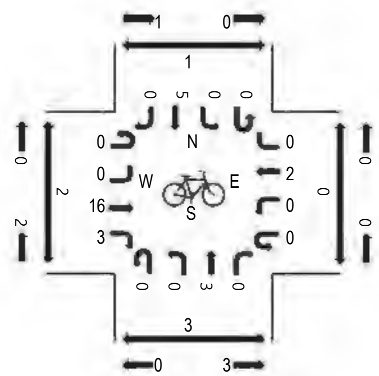
(303) 216-2439
www.alltrafficdata.net

Location: 2 MATHILDA AVE & MAUDE AVE PM
Date: Tuesday, September 28, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

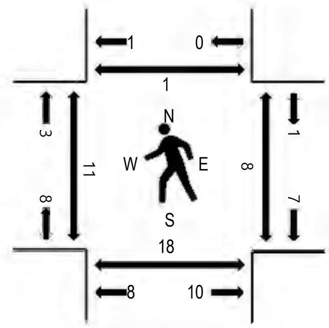
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAUDE AVE Eastbound U-Turn	Left	Thru	Right	MAUDE AVE Westbound U-Turn	Left	Thru	Right	MATHILDA AVE Northbound U-Turn	Left	Thru	Right	MATHILDA AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	1	30	27	11	0	21	12	35	7	7	136	15	2	39	190	14	547	2,466	0	2	0	0
4:15 PM	0	19	26	18	0	27	16	35	4	7	146	17	0	47	227	24	613	2,608	4	4	1	2
4:30 PM	0	23	30	17	0	38	20	45	5	12	152	10	0	37	198	16	603	2,684	0	3	5	0
4:45 PM	0	18	42	23	0	21	16	35	10	9	183	22	3	56	248	17	703	2,786	0	0	3	0
5:00 PM	0	36	46	18	0	19	25	29	3	6	195	16	4	56	221	15	689	2,799	3	2	3	0
5:15 PM	0	31	47	16	0	32	21	38	5	6	182	15	1	51	227	17	689	2,781	4	1	5	1
5:30 PM	0	20	36	26	0	26	20	42	9	8	175	30	1	53	245	14	705	2,747	4	0	4	0
5:45 PM	0	22	35	24	0	32	21	41	7	16	193	21	2	50	231	21	716	2,684	0	5	6	0
6:00 PM	0	23	32	25	0	23	21	42	7	9	202	23	2	46	197	19	671	2,529	1	1	2	0
6:15 PM	0	25	35	24	0	21	22	43	7	4	156	16	4	47	236	15	655		0	1	3	2
6:30 PM	0	23	24	24	0	17	19	29	8	11	165	28	3	41	228	22	642		1	3	4	1
6:45 PM	0	20	29	19	0	13	14	29	7	8	162	17	0	40	185	18	561		1	0	5	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	7
Lights	0	109	163	81	0	109	87	150	24	34	739	80	8	210	919	65	2,778
Mediums	0	0	1	3	0	0	0	0	0	2	3	1	0	0	2	2	14
Total	0	109	164	84	0	109	87	150	24	36	745	82	8	210	924	67	2,799

(303) 216-2439
www.alltrafficdata.net

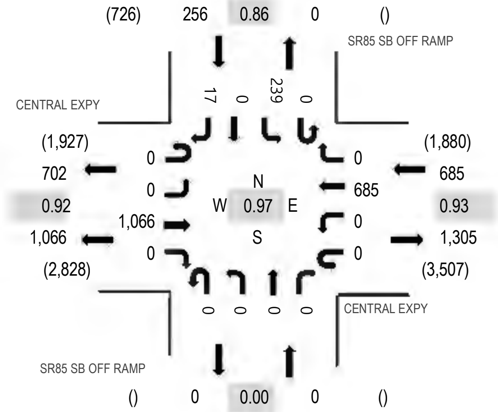
Location: 4 SR85 SB OFF RAMP & CENTRAL EXPY PM

Date: Tuesday, September 28, 2021

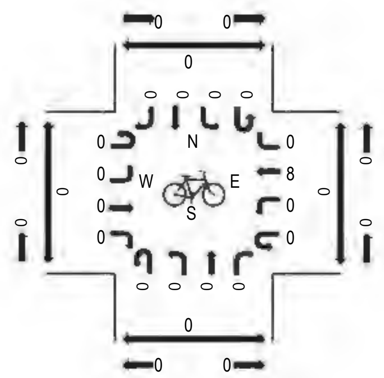
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

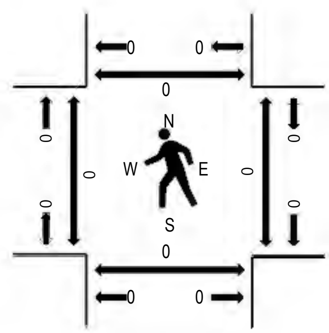
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	SR85 SB OFF RAMP Northbound U-Turn	Left	Thru	Right	SR85 SB OFF RAMP Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	0	213	0	0	0	136	0	0	0	0	0	0	53	0	3	405	1,886	0	0	0	0
4:15 PM	0	0	273	0	0	0	156	0	0	0	0	0	0	57	0	3	489	1,945	0	0	0	0
4:30 PM	0	0	276	0	0	0	148	0	0	0	0	0	0	54	0	4	482	1,975	0	0	0	0
4:45 PM	0	0	287	0	0	0	167	0	0	0	0	0	0	52	0	4	510	2,007	0	0	0	0
5:00 PM	0	0	218	0	0	0	169	0	0	0	0	0	0	72	0	5	464	1,970	0	0	0	0
5:15 PM	0	0	292	0	0	0	160	0	0	0	0	0	0	64	0	3	519	1,934	0	0	0	0
5:30 PM	0	0	269	0	0	0	189	0	0	0	0	0	0	51	0	5	514	1,888	0	0	0	0
5:45 PM	1	0	223	0	0	0	185	0	0	0	0	0	0	60	0	4	473	1,704	0	0	0	0
6:00 PM	1	0	209	0	0	0	155	0	0	0	0	0	0	60	0	3	428	1,578	0	0	0	0
6:15 PM	0	0	256	0	0	0	155	0	0	0	0	0	0	58	0	4	473		0	0	0	0
6:30 PM	0	0	149	0	0	0	122	0	0	0	0	0	0	55	0	4	330		0	0	0	0
6:45 PM	0	0	161	0	0	0	138	0	0	0	0	0	0	45	0	3	347		0	0	0	0

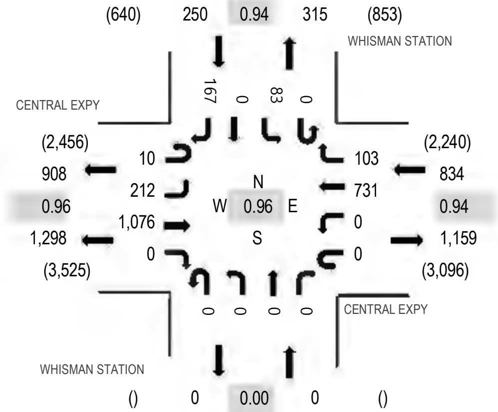
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	1,066	0	0	0	685	0	0	0	0	0	0	238	0	17	2,006
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	1,066	0	0	0	685	0	0	0	0	0	0	239	0	17	2,007

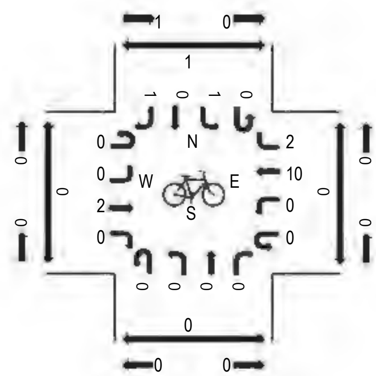
(303) 216-2439
www.alltrafficdata.net

Location: 5 WHISMAN STATION & CENTRAL EXPY PM
Date: Tuesday, September 28, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

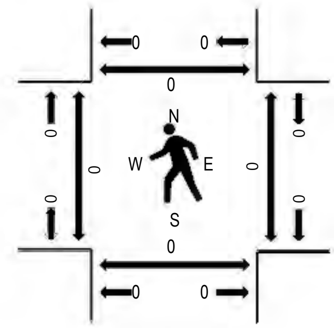
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	WHISMAN STATION Northbound U-Turn	Left	Thru	Right	WHISMAN STATION Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	3	46	311	0	0	0	121	15	0	0	0	0	0	16	0	32	544	2,195	0	0	0	0
4:15 PM	2	44	243	0	0	0	165	35	0	0	0	0	0	7	0	35	531	2,221	0	0	0	0
4:30 PM	4	50	250	0	0	0	174	19	0	0	0	0	0	16	0	30	543	2,275	0	0	0	0
4:45 PM	1	50	257	0	0	0	173	27	0	0	0	0	0	13	0	56	577	2,352	0	0	0	0
5:00 PM	0	56	243	0	0	0	178	23	0	0	0	0	0	28	0	42	570	2,382	0	0	0	0
5:15 PM	2	50	274	0	0	0	169	27	0	0	0	0	0	25	0	38	585	2,308	0	0	0	0
5:30 PM	4	51	284	0	0	0	196	25	0	0	0	0	0	18	0	42	620	2,227	0	0	0	0
5:45 PM	4	55	275	0	0	0	188	28	0	0	0	0	0	12	0	45	607	2,015	0	0	0	0
6:00 PM	6	42	208	0	0	0	168	19	0	0	0	0	0	12	0	41	496	1,828	0	0	0	0
6:15 PM	6	54	215	0	0	0	173	16	0	0	0	0	0	12	0	28	504		0	0	0	0
6:30 PM	1	40	194	0	0	0	117	15	0	0	0	0	0	7	0	34	408		0	0	0	0
6:45 PM	3	35	162	0	0	0	138	31	0	0	0	0	0	14	0	37	420		0	0	0	0

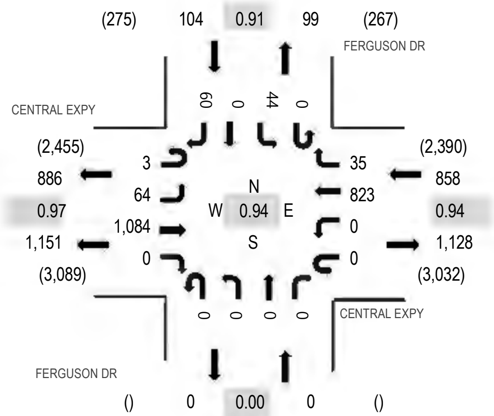
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	10	212	1,075	0	0	0	730	102	0	0	0	0	0	83	0	167	2,379
Mediums	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3
Total	10	212	1,076	0	0	0	731	103	0	0	0	0	0	83	0	167	2,382

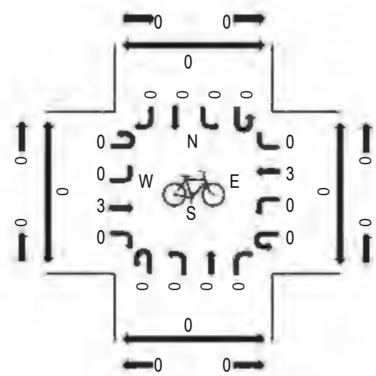
(303) 216-2439
www.alltrafficdata.net

Location: 6 FERGUSON DR & CENTRAL EXPY PM
Date: Tuesday, September 28, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

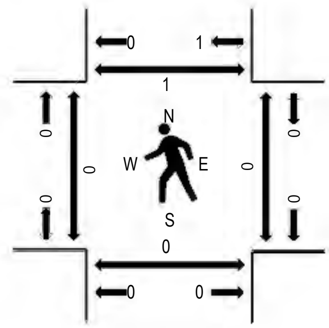
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	FERGUSON DR Northbound U-Turn	Left	Thru	Right	FERGUSON DR Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	10	318	0	1	0	146	11	0	0	0	0	0	9	0	10	505	1,991	0	0	0	0
4:15 PM	0	10	240	0	0	0	211	8	0	0	0	0	0	8	0	9	486	1,954	0	0	0	0
4:30 PM	0	16	250	0	0	0	195	5	0	0	0	0	0	6	0	14	486	2,021	0	0	0	0
4:45 PM	0	9	261	0	0	0	218	7	0	0	0	0	0	6	0	13	514	2,094	0	0	0	0
5:00 PM	0	15	260	0	0	0	165	9	0	0	0	0	0	8	0	11	468	2,113	0	0	0	0
5:15 PM	0	14	278	0	0	0	227	5	0	0	0	0	0	10	0	19	553	2,092	0	0	0	0
5:30 PM	1	19	277	0	0	0	221	10	0	0	0	0	0	15	0	16	559	1,996	0	0	0	0
5:45 PM	2	16	269	0	0	0	210	11	0	0	0	0	0	11	0	14	533	1,795	0	0	0	1
6:00 PM	2	11	215	0	0	0	180	11	0	0	0	0	0	13	0	15	447	1,650	0	0	0	0
6:15 PM	1	14	206	0	0	0	210	9	0	0	0	0	0	5	0	12	457		0	0	0	0
6:30 PM	1	19	181	0	0	0	130	8	0	0	0	0	0	7	0	12	358		0	0	0	0
6:45 PM	0	14	160	0	0	0	176	6	0	0	0	0	0	18	0	14	388		0	0	0	0

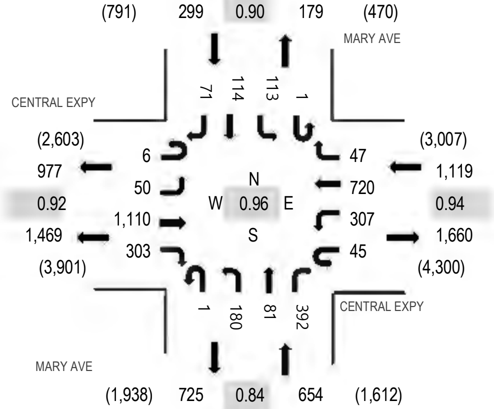
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	3	64	1,083	0	0	0	821	35	0	0	0	0	0	44	0	60	2,110
Mediums	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Total	3	64	1,084	0	0	0	823	35	0	0	0	0	0	44	0	60	2,113

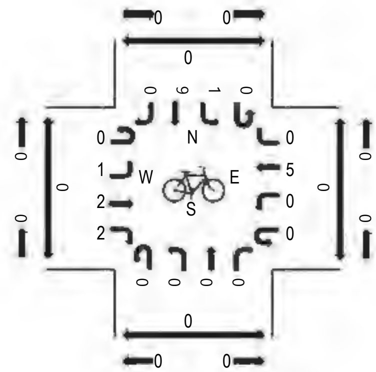
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 7 MARY AVE & CENTRAL EXPY PM
Date: Tuesday, September 28, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

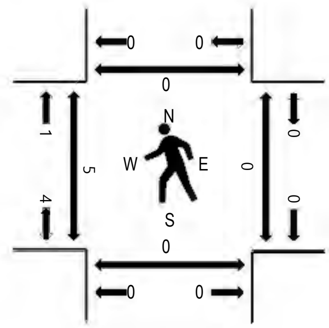
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CENTRAL EXPY Eastbound U-Turn	Left	Thru	Right	CENTRAL EXPY Westbound U-Turn	Left	Thru	Right	MARY AVE Northbound U-Turn	Left	Thru	Right	MARY AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	1	12	262	48	10	62	147	5	0	30	24	68	0	17	29	9	724	3,088	1	0	0	0
4:15 PM	1	10	273	45	2	61	159	1	0	30	18	102	0	22	27	8	759	3,231	1	0	0	0
4:30 PM	0	7	311	68	13	49	179	5	0	28	18	90	0	21	26	8	823	3,396	1	2	0	0
4:45 PM	3	8	251	56	10	77	180	9	0	27	22	73	0	30	24	12	782	3,492	1	1	0	0
5:00 PM	1	17	279	66	14	69	170	10	1	35	18	104	0	39	30	14	867	3,541	0	0	0	0
5:15 PM	0	7	318	74	10	84	179	13	0	41	16	108	0	27	30	17	924	3,401	2	0	0	0
5:30 PM	4	14	279	69	11	68	209	10	0	50	27	117	0	25	22	14	919	3,220	2	0	0	0
5:45 PM	1	12	234	94	10	86	162	14	0	54	20	63	1	22	32	26	831	2,926	1	0	0	0
6:00 PM	4	10	222	74	6	74	161	4	0	32	16	56	0	23	23	22	727	2,682	2	3	0	2
6:15 PM	0	9	227	70	8	61	143	10	0	42	28	68	0	27	28	22	743		1	2	1	3
6:30 PM	1	12	161	60	3	62	148	12	1	31	17	56	1	24	23	13	625		0	3	0	3
6:45 PM	1	10	138	77	2	67	147	11	0	21	12	48	0	16	21	16	587		2	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	6	50	1,109	303	45	307	718	47	1	180	81	391	1	113	114	71	3,537
Mediums	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	4
Total	6	50	1,110	303	45	307	720	47	1	180	81	392	1	113	114	71	3,541

(303) 216-2439
www.alltrafficdata.net

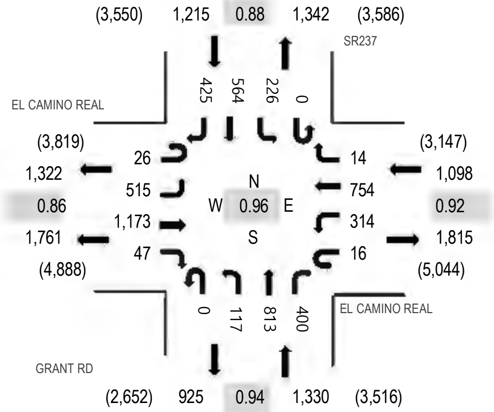
Location: 9 GRANT RD & EL CAMINO REAL PM

Date: Tuesday, September 28, 2021

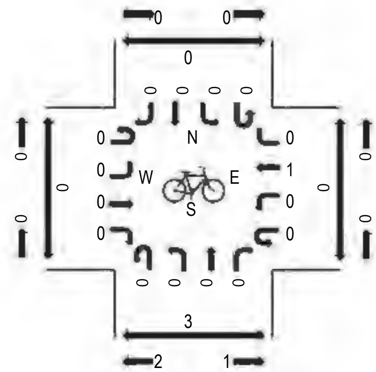
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

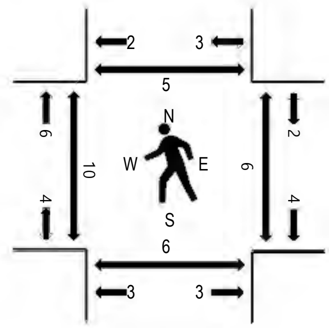
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EL CAMINO REAL Eastbound U-Turn	Left	Thru	Right	EL CAMINO REAL Westbound U-Turn	Left	Thru	Right	GRANT RD Northbound U-Turn	Left	Thru	Right	SR237 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	6	102	266	12	5	88	189	7	0	25	205	105	0	44	108	115	1,277	5,315	1	0	2	2
4:15 PM	4	124	315	11	7	72	165	2	1	35	203	90	1	55	116	102	1,303	5,303	1	0	2	0
4:30 PM	12	114	291	13	7	82	176	1	0	36	208	99	0	63	128	96	1,326	5,404	3	1	1	0
4:45 PM	5	125	265	11	4	99	177	3	0	30	233	101	0	58	186	112	1,409	5,345	2	3	1	2
5:00 PM	4	127	271	13	1	61	199	4	0	30	173	94	0	52	137	99	1,265	5,227	4	1	3	1
5:15 PM	5	149	346	10	4	72	202	6	0	21	199	106	0	53	113	118	1,404	5,175	1	1	1	2
5:30 PM	10	104	187	14	5	54	191	5	0	31	214	82	1	59	190	120	1,267	4,949	2	0	1	0
5:45 PM	4	107	296	13	6	70	220	3	0	22	188	92	0	46	110	114	1,291	4,715	0	1	0	1
6:00 PM	6	129	266	16	8	72	158	6	1	28	147	78	0	70	137	91	1,213	4,559	0	0	3	0
6:15 PM	5	127	287	15	6	51	142	6	0	26	131	71	0	73	142	96	1,178		0	2	1	0
6:30 PM	1	95	202	16	4	72	143	6	2	30	100	62	0	69	125	106	1,033		1	2	0	0
6:45 PM	9	104	257	17	3	86	188	9	1	38	118	60	0	53	115	77	1,135		1	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	4
Lights	26	513	1,162	47	16	314	746	14	0	117	813	399	0	224	561	423	5,375
Mediums	0	1	11	0	0	0	8	0	0	0	0	1	0	2	1	1	25
Total	26	515	1,173	47	16	314	754	14	0	117	813	400	0	226	564	425	5,404

(303) 216-2439
www.alltrafficdata.net

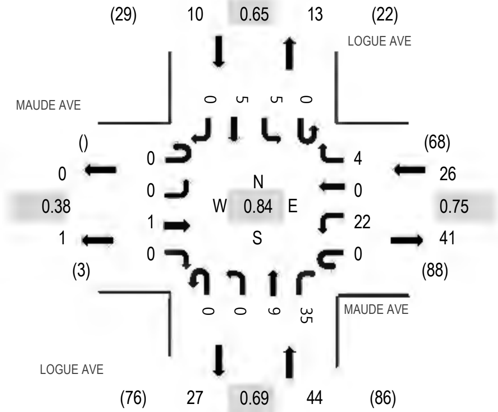
Location: 10 LOGUE AVE & MAUDE AVE PM

Date: Tuesday, September 28, 2021

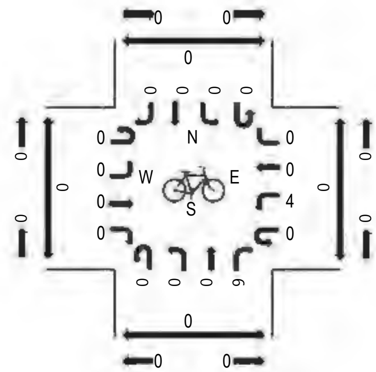
Peak Hour: 05:15 PM - 06:15 PM

Peak 15-Minutes: 05:45 PM - 06:00 PM

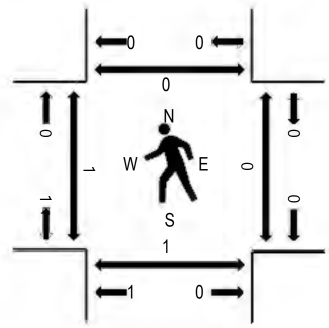
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAUDE AVE Eastbound U-Turn	Left	Thru	Right	MAUDE AVE Westbound U-Turn	Left	Thru	Right	LOGUE AVE Northbound U-Turn	Left	Thru	Right	LOGUE AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	0	0	0	0	3	0	0	0	0	1	7	0	0	1	0	12	52	0	0	0	0
4:15 PM	0	0	0	0	0	3	0	0	0	0	2	3	0	1	0	0	9	55	0	0	0	0
4:30 PM	0	0	0	0	0	8	0	0	0	0	1	5	0	1	2	0	17	64	0	0	0	0
4:45 PM	0	0	0	0	0	5	0	0	0	0	1	5	0	1	2	0	14	70	4	0	0	0
5:00 PM	0	0	2	0	0	4	0	1	0	0	0	6	0	1	1	0	15	80	0	0	0	0
5:15 PM	0	0	1	0	0	8	0	1	0	0	3	3	0	0	2	0	18	81	0	0	1	0
5:30 PM	0	0	0	0	0	5	0	1	0	0	2	14	0	1	0	0	23	72	0	0	0	0
5:45 PM	0	0	0	0	0	4	0	2	0	0	4	11	0	2	1	0	24	65	1	0	0	0
6:00 PM	0	0	0	0	0	5	0	0	0	0	0	7	0	2	2	0	16	54	0	0	0	0
6:15 PM	0	0	0	0	0	5	0	0	0	0	1	3	0	0	0	0	9		0	0	0	0
6:30 PM	0	0	0	0	0	8	0	0	0	0	0	4	0	4	0	0	16		0	0	0	0
6:45 PM	0	0	0	0	0	4	0	1	0	0	1	2	0	2	3	0	13		0	0	0	0

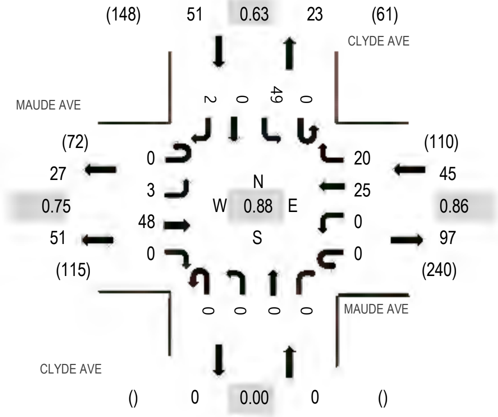
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Lights	0	0	1	0	0	18	0	4	0	0	9	33	0	5	5	0	75
Mediums	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	5
Total	0	0	1	0	0	22	0	4	0	0	9	35	0	5	5	0	81

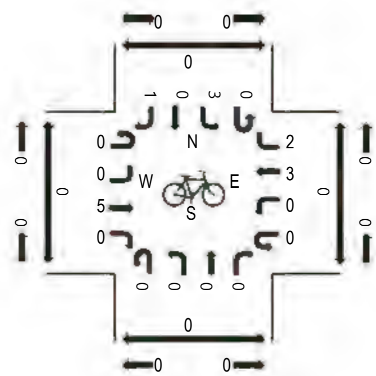
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 11 CLYDE AVE & MAUDE AVE PM
Date: Tuesday, September 28, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

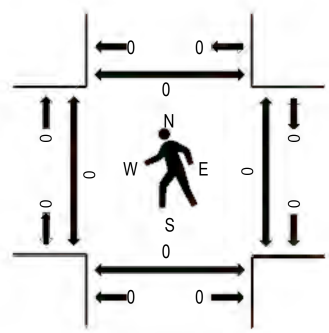
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAUDE AVE Eastbound U-Turn	Left	Thru	Right	MAUDE AVE Westbound U-Turn	Left	Thru	Right	CLYDE AVE Northbound U-Turn	Left	Thru	Right	CLYDE AVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	2	3	0	0	0	2	2	0	0	0	0	0	15	0	3	27	106	0	0	0	2
4:15 PM	0	3	5	0	0	0	4	4	0	0	0	0	0	9	0	0	25	121	0	0	0	0
4:30 PM	0	2	6	0	0	0	5	4	0	0	0	0	0	10	0	3	30	127	0	0	0	0
4:45 PM	0	0	7	0	0	0	5	2	0	0	0	0	0	10	0	0	24	134	0	0	0	0
5:00 PM	0	1	11	0	0	0	6	3	0	0	0	0	0	19	0	2	42	147	0	0	0	0
5:15 PM	0	1	9	0	0	0	8	4	0	0	0	0	0	9	0	0	31	140	0	0	0	0
5:30 PM	0	1	16	0	0	0	4	6	0	0	0	0	0	10	0	0	37	143	0	0	0	0
5:45 PM	0	0	12	0	0	0	7	7	0	0	0	0	0	11	0	0	37	137	0	0	0	0
6:00 PM	0	0	9	0	0	0	4	8	0	0	0	0	0	14	0	0	35	120	0	0	0	0
6:15 PM	0	3	7	0	0	0	6	3	0	0	0	0	0	15	0	0	34		0	0	0	0
6:30 PM	0	0	12	0	1	0	5	1	0	0	0	0	0	10	0	2	31		0	0	0	0
6:45 PM	0	1	4	0	0	0	6	3	0	0	0	0	0	6	0	0	20		0	0	0	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	3	46	0	0	0	23	20	0	0	0	0	0	49	0	2	143
Mediums	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4
Total	0	3	48	0	0	0	25	20	0	0	0	0	0	49	0	2	147

Appendix B

Volume Summary

Existing Volume Adjustment Summary

Study Inter. #	N/S Street	E/W Street	Jurisdiction	Count Date AM	Count Date PM	Count Source	Growth Factor AM	Growth Factor PM
1	Ellis Street	Manila Drive	MV	02/04/20	02/04/20	Moffett Park Specific Plan	0%	0%
2	Ellis Street	US 101 NB Ramps	MV	02/04/20	02/04/20	Moffett Park Specific Plan	0%	0%
3	Ellis Street	US 101 SB Ramps	MV	02/04/20	02/04/20	Moffett Park Specific Plan	0%	0%
4	Ellis Street	Fairchild Drive	MV	02/04/20	02/04/20	Moffett Park Specific Plan	0%	0%
5	SR 237 Ramps	Maude Ave	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
6	Mary Ave	Maude Ave	Sunnyvale	02/05/20	02/05/20	Moffett Park Specific Plan	0%	0%
7	Mathilda Ave	Maude Ave*	Sunnyvale/CMP	02/05/20	09/28/21	MPSP (AM) / New Counts (PM)	0%	185%
8	Moffett Blvd	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
9	Easy St	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
10	Whisman Rd	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
11	Ellis Street	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
12	Logue Ave	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
13	Ferguson Dr	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
14	SR 237 WB Ramps	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
15	SR 237 EB Ramps	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
16	Bernardo Ave	Middlefield Rd	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
17	Moffett Blvd	Central Expy*	SCC/CMP	05/22/19	11/01/18	777 Middlefield (AM) / CMP (PM)	5%	8%
18	SR 85 SB Off Ramp	Central Expy	SCC	09/28/21	09/28/21	New Counts for MPMP	67%	62%
19	Whisman Station Dr	Central Expy*	SCC/CMP	09/28/21	09/28/21	New Counts for MPMP	67%	62%
20	Ferguson Dr	Central Expy*	SCC/CMP	09/28/21	09/28/21	New Counts for MPMP	67%	62%
21	Mary Ave	Central Expy*	SCC/CMP	02/06/20	09/28/21	MPSP (AM) / New Counts (PM)	0%	62%
22	Mathilda Ave	Indio Ave	Sunnyvale	02/05/20	02/05/20	Moffett Park Specific Plan	0%	0%
23	Whisman Rd	SR 237 WB Ramps	MV	05/30/19	05/30/19	355 Middlefield SSTA	5%	5%
24	Grant Road/SR 237	El Camino Real	MV	09/28/21	09/28/21	New Counts for MPMP	67%	62%
25	Logue Ave	Maude Ave	MV	09/28/21	09/28/21	New Counts for MPMP	183%	185%
26	Clyde Ave	Maude Ave	MV	09/28/21	09/28/21	New Counts for MPMP	183%	185%

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: Ellis Street and Manila Drive
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/04/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	59	1	40	0	303	705	217	0	0	0	0	*1325*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	12	95	0	0	0	0	0	*107*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*12*	*95*	*0*	*0*	*0*	*0*	*0*	*107*
Background Conditions	0	59	1	40	0	315	800	217	0	0	0	0	*1432*
Proposed Project Trips	*0*	*8*	*0*	*0*	*0*	*0*	*0*	*22*	*0*	*0*	*0*	*0*	*30*
Existing + Project Conditions	0	67	1	40	0	303	705	239	0	0	0	0	*1355*
													0
Background + Project Conditions	0	67	1	40	0	315	800	239	0	0	0	0	*1462*
													0

Intersection Number: 2
Traffix Node Number: 2
Intersection Name: Ellis Street and US 101 NB Ramps
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/04/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	220	139	0	101	0	205	0	796	131	0	0	0	*1592*
Approved Project Trips													
EWPP List of Approved Project Trips	12	0	0	0	0	38	0	95	15	0	0	0	*160*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	10	0	0	0	*10*
Total Approved Trips	*12*	*0*	*0*	*0*	*0*	*38*	*0*	*95*	*25*	*0*	*0*	*0*	*170*
Background Conditions	232	139	0	101	0	243	0	891	156	0	0	0	*1762*
Proposed Project Trips	*0*	*8*	*0*	*0*	*0*	*79*	*0*	*22*	*140*	*0*	*0*	*0*	*249*
Existing + Project Conditions	220	147	0	101	0	284	0	818	271	0	0	0	*1841*
													0
Background + Project Conditions	232	147	0	101	0	322	0	913	296	0	0	0	*2011*
													0

Intersection Number: 3
Traffix Node Number: 3
Intersection Name: Ellis Street and US 101 SB Ramps
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/04/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	337	26	0	0	0	143	436	0	465	0	496	*1903*
Approved Project Trips													
EWPP List of Approved Project Trips	0	38	0	0	0	0	23	15	0	157	0	95	*328*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	49	0	0	*49*
Total Approved Trips	*0*	*38*	*0*	*0*	*0*	*0*	*23*	*15*	*0*	*206*	*0*	*95*	*377*
Background Conditions	0	375	26	0	0	0	166	451	0	671	0	591	*2280*
Proposed Project Trips	*0*	*86*	*0*	*0*	*0*	*0*	*59*	*163*	*0*	*92*	*0*	*0*	*400*
Existing + Project Conditions	0	423	26	0	0	0	202	599	0	557	0	496	*2303*
													0
Background + Project Conditions	0	461	26	0	0	0	225	614	0	763	0	591	*2680*
													0

Intersection Number: 4
Traffix Node Number: 4
Intersection Name: Ellis Street and Fairchild Drive
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/04/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	103	456	224	53	25	27	35	354	12	13	18	155	*1475*
Approved Project Trips													
EWPP List of Approved Project Trips	95	63	37	5	0	0	0	9	3	5	0	24	*241*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	49	10	0	0	0	0	0	0	0	0	*59*
Total Approved Trips	*95*	*63*	*86*	*15*	*0*	*0*	*0*	*9*	*3*	*5*	*0*	*24*	*300*
Background Conditions	198	519	310	68	25	27	35	363	15	18	18	179	*1775*
Proposed Project Trips	*0*	*61*	*118*	*56*	*0*	*0*	*0*	*166*	*0*	*0*	*0*	*0*	*401*
Existing + Project Conditions	103	517	342	109	25	27	35	520	12	13	18	155	*1876*
													0
Background + Project Conditions	198	580	428	124	25	27	35	529	15	18	18	179	*2176*
													0

Intersection Number: 5
Traffix Node Number: 5
Intersection Name: SR 237 Ramps and Maude Ave
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	336	449	361	140	254	256	394	280	97	34	103	40	*2744*
Approved Project Trips													
EWPP List of Approved Project Trips	0	4	66	4	17	18	107	5	0	0	39	0	*260*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	2	-18	0	0	0	0	0	*-16*
370 San Aleso Ave. (SV)	0	0	0	0	0	3	-3	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	20	22	0	0	0	0	0	*42*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	1	0	0	0	0	0	0	*1*
810 W. Maude Ave (SV)	0	0	0	0	10	17	82	0	0	0	49	0	*158*
Total Approved Trips	*0*	*4*	*66*	*4*	*27*	*61*	*190*	*5*	*0*	*0*	*88*	*0*	*445*
Background Conditions	336	453	427	144	281	317	584	285	97	34	191	40	*3189*
Proposed Project Trips	*65*	*0*	*0*	*0*	*67*	*13*	*10*	*0*	*71*	*41*	*47*	*69*	*383*
Existing + Project Conditions	401	449	361	140	321	269	404	280	168	75	150	109	*3127*
													0
Background + Project Conditions	401	453	427	144	348	330	594	285	168	75	238	109	*3572*
													0

Intersection Number: 6
Traffix Node Number: 7
Intersection Name: Mary Ave and Maude Ave
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/05/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	44	28	29	88	709	142	184	213	345	96	333	87	*2298*
Approved Project Trips													
EWPP List of Approved Project Trips	4	4	21	153	50	3	50	27	1	0	92	41	*446*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-18	0	*-16*
370 San Aleso Ave. (SV)	0	0	0	0	3	0	0	0	0	0	-3	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	20	0	0	0	0	0	22	0	*42*
210 W. Ahwanee Ave (SV)	0	0	0	0	1	0	0	0	0	0	0	0	*1*
810 W. Maude Ave (SV)	0	0	0	0	27	7	33	0	0	0	131	0	*198*
Total Approved Trips	*4*	*4*	*21*	*153*	*103*	*10*	*83*	*27*	*1*	*0*	*224*	*41*	*671*
Background Conditions	48	32	50	241	812	152	267	240	346	96	557	128	*2969*
Proposed Project Trips	*0*	*0*	*0*	*0*	*64*	*0*	*0*	*0*	*14*	*3*	*53*	*0*	*134*
Existing + Project Conditions	44	28	29	88	773	142	184	213	359	99	386	87	*2432*
													0
Background + Project Conditions	48	32	50	241	876	152	267	240	360	99	610	128	*3103*
													0

Intersection Number: 7
Traffix Node Number: 8
Intersection Name: Mathilda Ave and Maude Ave*
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/05/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	321	687	94	275	536	171	45	2196	613	87	84	98	*5207*
Approved Project Trips													
EWPP List of Approved Project Trips	259	163	6	30	48	11	3	521	54	7	8	91	*1201*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	2	4	1	-10	0	0	0	-14	0	0	0	-18	*-35*
370 San Aleso Ave. (SV)	3	4	1	-1	0	0	0	-2	0	0	0	-3	*2*
824 San Aleso Ave (SV)	20	31	11	12	0	0	0	16	0	0	0	22	*112*
210 W. Ahwanee Ave (SV)	1	1	0	0	0	0	0	0	0	0	0	0	*2*
810 W. Maude Ave (SV)	115	0	0	0	16	0	0	0	33	7	3	23	*197*
Total Approved Trips	*400*	*203*	*19*	*31*	*64*	*11*	*3*	*521*	*87*	*14*	*11*	*115*	*1479*
Background Conditions	721	890	113	306	600	182	48	2717	700	101	95	213	*6686*
Proposed Project Trips	*0*	*0*	*0*	*0*	*24*	*0*	*0*	*0*	*40*	*31*	*22*	*0*	*117*
Existing + Project Conditions	321	687	94	275	560	171	45	2196	653	118	106	98	*5324*
													0
Background + Project Conditions	721	890	113	306	624	182	48	2717	740	132	117	213	*6803*
													0

Intersection Number: 8
Traffix Node Number: 1027
Intersection Name: Moffett Blvd and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	264	257	79	81	725	152	113	406	98	59	337	159	*2730*
Approved Project Trips													
EWPP List of Approved Project Trips	0	1	0	0	9	0	0	2	0	0	50	0	*62*
777 W Middlefield Rd (MV)	5	0	0	0	3	0	0	0	1	14	11	31	*65*
759 West Middlefield Road (MV)	1	0	0	0	1	0	0	0	0	5	2	13	*22*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*6*	*1*	*0*	*0*	*16*	*0*	*0*	*2*	*1*	*19*	*76*	*44*	*165*
Background Conditions	270	258	79	81	741	152	113	408	99	78	413	203	*2895*
Proposed Project Trips	*0*	*0*	*0*	*0*	*26*	*22*	*14*	*0*	*0*	*0*	*23*	*0*	*85*
Existing + Project Conditions	264	257	79	81	751	174	127	406	98	59	360	159	*2815*
													0
Background + Project Conditions	270	258	79	81	767	174	127	408	99	78	436	203	*2980*
													0

Intersection Number: 9
Traffix Node Number: 1038
Intersection Name: Easy St and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	185	18	110	86	678	13	30	32	100	33	400	104	*1789*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	9	0	0	0	0	0	50	0	*59*
777 W Middlefield Rd (MV)	0	0	0	0	3	0	0	0	0	0	11	0	*14*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	2	0	*3*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*0*	*0*	*0*	*0*	*16*	*0*	*0*	*0*	*0*	*0*	*76*	*0*	*92*
Background Conditions	185	18	110	86	694	13	30	32	100	33	476	104	*1881*
Proposed Project Trips	*0*	*0*	*0*	*0*	*48*	*0*	*0*	*0*	*0*	*0*	*37*	*0*	*85*
Existing + Project Conditions	185	18	110	86	726	13	30	32	100	33	437	104	*1874*
													0
Background + Project Conditions	185	18	110	86	742	13	30	32	100	33	513	104	*1966*
													0

Intersection Number: 10
Traffix Node Number: 9
Intersection Name: Whisman Rd and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	63	122	61	91	413	65	188	172	170	126	377	92	*1940*
Approved Project Trips													
EWPP List of Approved Project Trips	3	5	12	82	7	0	3	11	0	0	43	7	*173*
777 W Middlefield Rd (MV)	0	0	0	0	2	0	0	0	0	1	8	1	*12*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	2	0	*3*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*3*	*5*	*12*	*82*	*13*	*0*	*3*	*11*	*0*	*1*	*66*	*8*	*204*
Background Conditions	66	127	73	173	426	65	191	183	170	127	443	100	*2144*
Proposed Project Trips	*0*	*0*	*5*	*3*	*49*	*31*	*3*	*0*	*0*	*0*	*40*	*0*	*131*
Existing + Project Conditions	63	122	66	94	462	96	191	172	170	126	417	92	*2071*
													0
Background + Project Conditions	66	127	78	176	475	96	194	183	170	127	483	100	*2275*
													0

Intersection Number: 11
Traffix Node Number: 10
Intersection Name: Ellis Street and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	109	0	160	470	564	0	0	0	0	0	385	256	*1944*
Approved Project Trips													
EWPP List of Approved Project Trips	1	0	42	35	89	0	0	0	0	0	53	5	*225*
777 W Middlefield Rd (MV)	1	0	0	0	1	0	0	0	0	0	5	2	*9*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	1	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*2*	*0*	*42*	*35*	*93*	*0*	*0*	*0*	*0*	*0*	*72*	*7*	*251*
Background Conditions	111	0	202	505	657	0	0	0	0	0	457	263	*2195*
Proposed Project Trips	*36*	*0*	*55*	*99*	*46*	*0*	*0*	*0*	*0*	*0*	*29*	*18*	*283*
Existing + Project Conditions	145	0	215	569	610	0	0	0	0	0	414	274	*2227*
													0
Background + Project Conditions	147	0	257	604	703	0	0	0	0	0	486	281	*2478*
													0

Intersection Number: 12
Traffix Node Number: 11
Intersection Name: Logue Ave and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	125	5	15	130	911	48	9	0	1	13	429	85	*1771*
Approved Project Trips													
EWPP List of Approved Project Trips	12	0	0	0	111	0	0	0	0	0	94	2	*219*
777 W Middlefield Rd (MV)	1	0	0	0	0	0	0	0	0	0	3	2	*6*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	1	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*13*	*0*	*0*	*0*	*114*	*0*	*0*	*0*	*0*	*0*	*111*	*4*	*242*
Background Conditions	138	5	15	130	1025	48	9	0	1	13	540	89	*2013*
Proposed Project Trips	*102*	*0*	*4*	*16*	*44*	*0*	*0*	*0*	*0*	*0*	*48*	*37*	*251*
Existing + Project Conditions	227	5	19	146	955	48	9	0	1	13	477	122	*2022*
													0
Background + Project Conditions	240	5	19	146	1069	48	9	0	1	13	588	126	*2264*
													0

Intersection Number: 13
Traffix Node Number: 12
Intersection Name: Ferguson Dr and Middlefield Rd
Peak Hour: AM — Date of Analysis: 10/15/21
Count Date: 05/30/19

Scenario	Southbound Approach RT	TH	LT	Westbound Approach RT	TH	LT	Northbound Approach RT	TH	LT	Eastbound Approach RT	TH	LT	Total
Existing Conditions	0	0	0	0	1157	35	140	0	61	26	436	0	*1855*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	111	1	0	0	0	0	94	0	*206*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	3	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	1	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	13	0	*16*
Total Approved Trips	*0*	*0*	*0*	*0*	*114*	*1*	*0*	*0*	*0*	*0*	*111*	*0*	*226*
Background Conditions	0	0	0	0	1271	36	140	0	61	26	547	0	*2081*
Proposed Project Trips	*0*	*0*	*0*	*0*	*42*	*4*	*1*	*0*	*18*	*9*	*43*	*0*	*117*
Existing + Project Conditions	0	0	0	0	1199	39	141	0	79	35	479	0	*1972*
													0
Background + Project Conditions	0	0	0	0	1313	40	141	0	79	35	590	0	*2198*
													0

Intersection Number: 14
Traffix Node Number: 13
Intersection Name: SR 237 WB Ramps and Middlefield Rd
Peak Hour: AM — Date of Analysis: 10/15/21
Count Date: 05/30/19

Scenario	Southbound Approach RT	TH	LT	Westbound Approach RT	TH	LT	Northbound Approach RT	TH	LT	Eastbound Approach RT	TH	LT	Total
Existing Conditions	301	152	109	0	893	124	0	0	0	60	511	0	*2150*
Approved Project Trips													
EWPP List of Approved Project Trips	6	13	4	0	106	4	0	0	0	8	86	0	*227*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	3	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	1	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	2	0	0	0	0	0	-18	0	0	0	0	*-16*
370 San Aleso Ave. (SV)	0	3	0	0	0	0	0	-3	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	20	0	0	0	0	0	22	0	0	0	0	*42*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	0	0	0	0	0	*1*
810 W. Maude Ave (SV)	3	14	0	0	0	0	0	0	0	0	13	0	*30*
Total Approved Trips	*9*	*53*	*4*	*0*	*106*	*4*	*0*	*1*	*0*	*8*	*103*	*0*	*288*
Background Conditions	310	205	113	0	999	128	0	1	0	68	614	0	*2438*
Proposed Project Trips	*19*	*33*	*1*	*0*	*28*	*0*	*0*	*0*	*0*	*12*	*32*	*0*	*125*
Existing + Project Conditions	320	185	110	0	921	124	0	0	0	72	543	0	*2275*
													0
Background + Project Conditions	329	238	114	0	1027	128	0	1	0	80	646	0	*2563*
													0

Intersection Number: 15
Traffix Node Number: 14
Intersection Name: SR 237 EB Ramps and Middlefield Rd
Peak Hour: AM — Date of Analysis: 10/15/21
Count Date: 05/30/19

Scenario	Southbound Approach RT	TH	LT	Westbound Approach RT	TH	LT	Northbound Approach RT	TH	LT	Eastbound Approach RT	TH	LT	Total
Existing Conditions	0	0	0	154	668	0	219	372	275	0	277	343	*2308*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	50	0	17	115	60	0	58	32	*332*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	3	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	1	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	2	0	0	0	0	0	-18	0	0	0	0	*-16*
370 San Aleso Ave. (SV)	0	3	0	0	0	0	0	-3	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	20	0	0	0	0	0	22	0	0	0	0	*42*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	0	0	0	0	0	*1*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	69	0	0	0	13	*82*
Total Approved Trips	*0*	*26*	*0*	*0*	*50*	*0*	*17*	*185*	*60*	*0*	*62*	*45*	*445*
Background Conditions	0	26	0	154	718	0	236	557	335	0	339	388	*2753*
Proposed Project Trips	*0*	*0*	*0*	*2*	*13*	*0*	*0*	*69*	*15*	*0*	*22*	*11*	*132*
Existing + Project Conditions	0	0	0	156	681	0	219	441	290	0	299	354	*2440*
													0
Background + Project Conditions	0	26	0	156	731	0	236	626	350	0	361	399	*2885*
													0

Intersection Number: 16
Traffix Node Number: 15
Intersection Name: Bernardo Ave and Middlefield Rd
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	14	4	12	82	817	29	8	34	30	128	306	67	*1531*
Approved Project Trips													
EWPP List of Approved Project Trips	4	1	5	10	45	1	0	12	0	0	19	55	*152*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	2	0	1	*3*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*4*	*1*	*5*	*10*	*45*	*1*	*0*	*12*	*0*	*2*	*19*	*56*	*155*
Background Conditions	18	5	17	92	862	30	8	46	30	130	325	123	*1686*
Proposed Project Trips	*0*	*0*	*0*	*0*	*9*	*0*	*0*	*0*	*5*	*3*	*18*	*0*	*35*
Existing + Project Conditions	14	4	12	82	826	29	8	34	35	131	324	67	*1566*
													0
Background + Project Conditions	18	5	17	92	871	30	8	46	35	133	343	123	*1721*
													0

Intersection Number: 17
Traffix Node Number: 1029
Intersection Name: Moffett Blvd and Central Expy*
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/22/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	231	148	48	112	1126	141	74	195	159	101	842	97	*3274*
Approved Project Trips													
EWPP List of Approved Project Trips	0	1	1	1	32	1	1	0	0	0	154	0	*191*
777 W Middlefield Rd (MV)	10	4	0	0	4	0	0	1	1	0	0	0	*20*
759 West Middlefield Road (MV)	2	1	1	0	0	0	0	0	0	0	0	0	*4*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-7	0	*-5*
370 San Aleso Ave. (SV)	0	0	0	0	1	0	0	0	0	0	-1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	8	0	0	0	0	0	8	0	*16*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	16	0	*19*
Total Approved Trips	*12*	*6*	*2*	*1*	*50*	*1*	*1*	*1*	*1*	*0*	*170*	*0*	*245*
Background Conditions	243	154	50	113	1176	142	75	196	160	101	1012	97	*3519*
Proposed Project Trips	*10*	*12*	*0*	*0*	*15*	*1*	*0*	*4*	*0*	*0*	*13*	*9*	*64*
Existing + Project Conditions	241	160	48	112	1141	142	74	199	159	101	855	106	*3338*
													0
Background + Project Conditions	253	166	50	113	1191	143	75	200	160	101	1025	106	*3583*
													0

Intersection Number: 18
Traffix Node Number: 16
Intersection Name: SR 85 SB Off Ramp and Central Expy
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	23	0	256	0	2330	0	0	0	0	0	817	0	*3426*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	33	0	0	0	0	0	156	0	*189*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-7	0	*-5*
370 San Aleso Ave. (SV)	0	0	0	0	1	0	0	0	0	0	-1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	8	0	0	0	0	0	8	0	*16*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	16	0	*19*
Total Approved Trips	*0*	*0*	*0*	*0*	*47*	*0*	*0*	*0*	*0*	*0*	*172*	*0*	*219*
Background Conditions	23	0	256	0	2377	0	0	0	0	0	989	0	*3645*
Proposed Project Trips	*0*	*0*	*0*	*0*	*16*	*0*	*0*	*0*	*0*	*0*	*14*	*0*	*30*
Existing + Project Conditions	23	0	256	0	2346	0	0	0	0	0	831	0	*3456*
													0
Background + Project Conditions	23	0	256	0	2393	0	0	0	0	0	1003	0	*3675*
													0

Intersection Number: 19
Traffix Node Number: 17
Intersection Name: Whisman Station Dr and Central Expy*
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	596	0	68	149	2258	0	0	0	0	0	879	246	*4196*
Approved Project Trips													
EWPP List of Approved Project Trips	5	0	0	0	28	0	0	0	0	0	141	14	*188*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-7	0	*-5*
370 San Aleso Ave. (SV)	0	0	0	0	1	0	0	0	0	0	-1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	8	0	0	0	0	0	8	0	*16*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	16	0	*19*
Total Approved Trips	*5*	*0*	*0*	*0*	*42*	*0*	*0*	*0*	*0*	*0*	*157*	*14*	*218*
Background Conditions	601	0	68	149	2300	0	0	0	0	0	1036	260	*4414*
Proposed Project Trips	*5*	*0*	*0*	*0*	*11*	*0*	*0*	*0*	*0*	*0*	*16*	*-2*	*30*
Existing + Project Conditions	601	0	68	149	2269	0	0	0	0	0	895	244	*4226*
													0
Background + Project Conditions	606	0	68	149	2311	0	0	0	0	0	1052	258	*4444*
													0

Intersection Number: 20
Traffix Node Number: 18
Intersection Name: Ferguson Dr and Central Expy*
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	142	0	48	42	2344	0	0	0	0	0	924	65	*3565*
Approved Project Trips													
EWPP List of Approved Project Trips	1	0	0	0	28	0	0	0	0	0	141	0	*170*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-7	0	*-5*
370 San Aleso Ave. (SV)	0	0	0	0	1	0	0	0	0	0	-1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	8	0	0	0	0	0	8	0	*16*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	3	0	0	0	0	0	16	0	*19*
Total Approved Trips	*1*	*0*	*0*	*0*	*42*	*0*	*0*	*0*	*0*	*0*	*157*	*0*	*200*
Background Conditions	143	0	48	42	2386	0	0	0	0	0	1081	65	*3765*
Proposed Project Trips	*11*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*16*	*27*
Existing + Project Conditions	153	0	48	42	2344	0	0	0	0	0	924	81	*3592*
													0
Background + Project Conditions	154	0	48	42	2386	0	0	0	0	0	1081	81	*3792*
													0

Intersection Number: 21
Traffix Node Number: 20
Intersection Name: Mary Ave and Central Expy*
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/06/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	179	107	83	355	1807	141	502	558	629	161	840	157	*5519*
Approved Project Trips													
EWPP List of Approved Project Trips	3	4	0	0	78	6	28	58	21	6	127	20	*351*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	2	0	0	0	0	0	-7	0	*-5*
370 San Aleso Ave. (SV)	0	0	0	0	1	0	0	0	0	0	-1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	8	0	0	0	0	0	8	0	*16*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	3	3	0	0	0	0	0	16	0	0	0	16	*38*
Total Approved Trips	*6*	*7*	*0*	*0*	*89*	*6*	*28*	*74*	*21*	*6*	*127*	*36*	*400*
Background Conditions	185	114	83	355	1896	147	530	632	650	167	967	193	*5919*
Proposed Project Trips	*0*	*2*	*0*	*0*	*6*	*0*	*0*	*12*	*3*	*0*	*18*	*0*	*41*
Existing + Project Conditions	179	109	83	355	1813	141	502	570	632	161	858	157	*5560*
													0
Background + Project Conditions	185	116	83	355	1902	147	530	644	653	167	985	193	*5960*
													0

Intersection Number: 22
Traffix Node Number: 1036
Intersection Name: Mathilda Ave and Indio Ave
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 02/05/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	64	851	22	428	15	104	114	2488	94	247	0	11	*4438*
Approved Project Trips													
EWPP List of Approved Project Trips	0	169	12	92	0	74	20	486	0	0	0	0	*853*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	1	1	2	-14	0	0	0	-14	0	0	0	0	*-24*
370 San Aleso Ave. (SV)	1	1	2	-2	0	0	0	-2	0	0	0	0	*0*
824 San Aleso Ave (SV)	8	8	15	17	0	0	0	16	0	0	0	0	*64*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	3	4	20	0	0	0	13	0	0	0	0	*40*
Total Approved Trips	*10*	*182*	*35*	*113*	*0*	*74*	*20*	*499*	*0*	*0*	*0*	*0*	*933*
Background Conditions	74	1033	57	541	15	178	134	2987	94	247	0	11	*5371*
Proposed Project Trips	*0*	*2*	*29*	*28*	*0*	*0*	*0*	*12*	*0*	*0*	*0*	*0*	*71*
Existing + Project Conditions	64	853	51	456	15	104	114	2500	94	247	0	11	*4509*
													0
Background + Project Conditions	74	1035	86	569	15	178	134	2999	94	247	0	11	*5442*
													0

Intersection Number: 23
Traffix Node Number: 1039
Intersection Name: Whisman Rd and SR 237 WB Ramps
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	330	187	98	254	8	38	205	124	225	58	17	362	*1906*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	*0*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Background Conditions	330	187	98	254	8	38	205	124	225	58	17	362	*1906*
Proposed Project Trips	*0*	*23*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*23*
Existing + Project Conditions	330	210	98	254	8	38	205	124	225	58	17	362	*1929*
													0
Background + Project Conditions	330	210	98	254	8	38	205	124	225	58	17	362	*1929*
													0

Intersection Number: 24
Traffix Node Number: 21
Intersection Name: Grant Road/SR 237 and El Camino Real
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	994	1119	331	17	1361	499	456	964	135	67	1290	730	*7963*
Approved Project Trips													
EWPP List of Approved Project Trips	8	19	0	0	2	3	11	94	0	0	8	34	*179*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	2	0	0	0	0	0	-18	0	0	0	0	*-16*
370 San Aleso Ave. (SV)	0	3	0	0	0	0	0	-3	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	20	0	0	0	0	0	22	0	0	0	0	*42*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	0	0	0	0	0	*1*
810 W. Maude Ave (SV)	0	7	0	0	0	0	0	36	0	0	0	0	*43*
Total Approved Trips	*8*	*52*	*0*	*0*	*2*	*3*	*11*	*131*	*0*	*0*	*8*	*34*	*249*
Background Conditions	1002	1171	331	17	1363	502	467	1095	135	67	1298	764	*8212*
Proposed Project Trips	*0*	*19*	*0*	*0*	*0*	*0*	*0*	*38*	*0*	*0*	*0*	*0*	*57*
Existing + Project Conditions	994	1138	331	17	1361	499	456	1002	135	67	1290	730	*8020*
													0
Background + Project Conditions	1002	1190	331	17	1363	502	467	1133	135	67	1298	764	*8269*
													0

Intersection Number: 25
Traffix Node Number: 150
Intersection Name: Logue Ave and Maude Ave
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	23	11	23	0	264	37	11	6	0	0	0	*375*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	12	2	0	0	0	0	0	*14*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*12*	*2*	*0*	*0*	*0*	*0*	*0*	*14*
Background Conditions	0	23	11	23	0	276	39	11	6	0	0	0	*389*
Proposed Project Trips	*0*	*3*	*6*	*33*	*0*	*103*	*40*	*13*	*0*	*0*	*0*	*0*	*198*
Existing + Project Conditions	0	26	17	56	0	367	77	24	6	0	0	0	*573*
													0
Background + Project Conditions	0	26	17	56	0	379	79	24	6	0	0	0	*587*
													0

Intersection Number: 26
Traffix Node Number: 149
Intersection Name: Clyde Ave and Maude Ave
Peak Hour: AM
Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	14	0	54	201	317	0	0	0	0	0	40	14	*640*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	37	5	12	0	0	0	0	0	2	0	*56*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	49	10	0	0	0	0	0	0	0	0	*59*
Total Approved Trips	*0*	*0*	*86*	*15*	*12*	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*115*
Background Conditions	14	0	140	216	329	0	0	0	0	0	42	14	*755*
Proposed Project Trips	*13*	*0*	*38*	*267*	*-64*	*0*	*0*	*0*	*0*	*0*	*119*	*74*	*447*
Existing + Project Conditions	27	0	92	468	253	0	0	0	0	0	159	88	*1087*
													0
Background + Project Conditions	27	0	178	483	265	0	0	0	0	0	161	88	*1202*
													0

Intersection Number: 1
Traffic Node Number: 1
Intersection Name: Ellis Street and Manila Drive
Peak Hour: PM
Count Date: 02/04/20
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	165	12	5	0	537	192	39	0	0	0	0	*950*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	55	19	0	0	0	0	0	*74*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*55*	*19*	*0*	*0*	*0*	*0*	*0*	*74*
Background Conditions	0	165	12	5	0	592	211	39	0	0	0	0	*1024*
Proposed Project Trips	*0*	*22*	*0*	*0*	*0*	*0*	*0*	*14*	*0*	*0*	*0*	*0*	*36*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	0	187	12	5	0	537	192	53	0	0	0	0	*986*
													0
Background + Project Conditions	0	187	12	5	0	592	211	53	0	0	0	0	*1060*
													0

Intersection Number: 2
Traffic Node Number: 2
Intersection Name: Ellis Street and US 101 NB Ramps
Peak Hour: PM
Count Date: 02/04/20
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	273	424	0	29	0	172	0	201	293	0	0	0	*1392*
Approved Project Trips													
EWPP List of Approved Project Trips	55	0	0	0	0	18	0	19	95	0	0	0	*187*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	44	0	0	0	*44*
Total Approved Trips	*55*	*0*	*0*	*0*	*0*	*18*	*0*	*19*	*139*	*0*	*0*	*0*	*231*
Background Conditions	328	424	0	29	0	190	0	220	432	0	0	0	*1623*
Proposed Project Trips	*0*	*22*	*0*	*0*	*0*	*52*	*0*	*14*	*110*	*0*	*0*	*0*	*198*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	273	446	0	29	0	224	0	215	403	0	0	0	*1590*
													0
Background + Project Conditions	328	446	0	29	0	242	0	234	542	0	0	0	*1821*
													0

Intersection Number: 3
Traffic Node Number: 3
Intersection Name: Ellis Street and US 101 SB Ramps
Peak Hour: PM
Count Date: 02/04/20
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	0	500	90	0	0	0	242	384	0	261	0	129	*1606*
Approved Project Trips													
EWPP List of Approved Project Trips	0	18	0	0	0	0	82	95	0	30	0	19	*244*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	8	0	0	*8*
Total Approved Trips	*0*	*18*	*0*	*0*	*0*	*0*	*82*	*95*	*0*	*38*	*0*	*19*	*252*
Background Conditions	0	518	90	0	0	0	324	479	0	299	0	148	*1858*
Proposed Project Trips	*0*	*74*	*0*	*0*	*0*	*0*	*96*	*124*	*0*	*137*	*0*	*0*	*431*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	0	574	90	0	0	0	338	508	0	398	0	129	*2037*
													0
Background + Project Conditions	0	592	90	0	0	0	420	603	0	436	0	148	*2289*
													0

Intersection Number: 4
Traffic Node Number: 4
Intersection Name: Ellis Street and Fairchild Drive
Peak Hour: PM
Date of Analysis: 10/15/21
Count Date: 02/04/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	230	439	88	196	26	25	23	323	6	11	9	111	*1487*
Approved Project Trips													
EWPP List of Approved Project Trips	29	12	7	32	0	0	0	57	6	4	0	89	*236*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	8	44	0	0	0	0	0	0	0	0	*52*
Total Approved Trips	*29*	*12*	*15*	*76*	*0*	*0*	*0*	*57*	*6*	*4*	*0*	*89*	*288*
Background Conditions	259	451	103	272	26	25	23	380	12	15	9	200	*1775*
Proposed Project Trips	*0*	*164*	*47*	*133*	*0*	*0*	*0*	*87*	*0*	*0*	*0*	*0*	*431*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	230	603	135	329	26	25	23	410	6	11	9	111	*1918*
													0
Background + Project Conditions	259	615	150	405	26	25	23	467	12	15	9	200	*2206*
													0

Intersection Number: 5
Traffic Node Number: 5
Intersection Name: SR 237 Ramps and Maude Ave
Peak Hour: PM
Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	70	352	117	286	85	348	342	236	37	138	278	76	*2365*
Approved Project Trips													
EWPP List of Approved Project Trips	0	3	12	28	34	106	23	32	0	0	19	0	*257*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	-15	0	0	0	0	0	0	*-15*
370 San Aleso Ave. (SV)	0	0	0	0	0	-2	2	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	10	12	0	0	0	0	0	*22*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	1	1	0	0	0	0	0	*2*
810 W. Maude Ave (SV)	0	0	0	0	44	74	13	0	0	0	8	0	*139*
Total Approved Trips	*0*	*3*	*12*	*28*	*78*	*174*	*51*	*32*	*0*	*0*	*27*	*0*	*405*
Background Conditions	70	355	129	314	163	522	393	268	37	138	305	76	*2770*
Proposed Project Trips	*70*	*0*	*0*	*0*	*50*	*19*	*13*	*0*	*48*	*66*	*63*	*35*	*364*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	140	352	117	286	135	367	355	236	85	204	341	111	*2729*
													0
Background + Project Conditions	140	355	129	314	213	541	406	268	85	204	368	111	*3134*
													0

Intersection Number: 6
Traffic Node Number: 7
Intersection Name: Mary Ave and Maude Ave
Peak Hour: PM
Date of Analysis: 10/15/21
Count Date: 02/05/20

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	71	300	74	34	336	234	140	31	104	387	440	30	*2181*
Approved Project Trips													
EWPP List of Approved Project Trips	27	23	129	31	81	17	10	5	0	1	56	8	*388*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-15	0	0	0	0	0	0	0	*-15*
370 San Aleso Ave. (SV)	0	0	0	0	-2	0	0	0	0	0	2	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	10	0	0	0	0	0	12	0	*22*
210 W. Ahwanee Ave (SV)	0	0	0	0	1	0	0	0	0	0	1	0	*2*
810 W. Maude Ave (SV)	0	0	0	0	118	30	5	0	0	0	21	0	*174*
Total Approved Trips	*27*	*23*	*129*	*31*	*193*	*47*	*15*	*5*	*0*	*1*	*92*	*8*	*571*
Background Conditions	98	323	203	65	529	281	155	36	104	388	532	38	*2752*
Proposed Project Trips	*0*	*0*	*0*	*0*	*60*	*0*	*0*	*0*	*5*	*12*	*61*	*0*	*138*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	71	300	74	34	396	234	140	31	109	399	501	30	*2319*
													0
Background + Project Conditions	98	323	203	65	589	281	155	36	109	400	593	38	*2890*
													0

Intersection Number: 7
Traffic Node Number: 8
Intersection Name: Mathilda Ave and Maude Ave*
Peak Hour: PM — Date of Analysis: 10/15/21
Count Date: 09/28/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	150	2067	488	336	195	244	183	1667	134	188	367	244	*6263*
Approved Project Trips													
EWPP List of Approved Project Trips	69	488	26	9	11	3	10	159	11	45	42	237	*1110*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	-15	-23	-8	0	0	0	0	0	0	0	0	0	*-46*
370 San Aleso Ave. (SV)	-2	-4	-1	1	0	0	0	2	0	0	0	2	*-2*
824 San Aleso Ave (SV)	10	16	5	6	0	0	0	10	0	0	0	12	*59*
210 W. Ahwanee Ave (SV)	1	0	0	0	0	0	0	0	0	0	0	1	*2*
810 W. Maude Ave (SV)	18	0	0	0	3	0	0	0	5	30	15	103	*174*
Total Approved Trips	*81*	*477*	*22*	*16*	*14*	*3*	*10*	*171*	*16*	*75*	*57*	*355*	*1297*
Background Conditions	231	2544	510	352	209	247	193	1838	150	263	424	599	*7560*
Proposed Project Trips	*0*	*0*	*0*	*0*	*26*	*0*	*0*	*0*	*34*	*34*	*27*	*0*	*121*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	150	2067	488	336	221	244	183	1667	168	222	394	244	*6384*
													0
Background + Project Conditions	231	2544	510	352	235	247	193	1838	184	297	451	599	*7681*
													0

Intersection Number: 8
Traffic Node Number: 1027
Intersection Name: Moffett Blvd and Middlefield Rd
Peak Hour: PM — Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	164	680	117	43	486	198	139	215	84	125	847	131	*3229*
Approved Project Trips													
EWPP List of Approved Project Trips	0	2	0	0	43	0	0	2	0	0	11	0	*58*
777 W Middlefield Rd (MV)	13	0	0	0	9	0	0	0	2	9	7	21	*61*
759 West Middlefield Road (MV)	2	0	0	0	2	0	0	0	1	3	1	9	*18*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*15*	*2*	*0*	*0*	*66*	*0*	*0*	*2*	*3*	*12*	*21*	*30*	*151*
Background Conditions	179	682	117	43	552	198	139	217	87	137	868	161	*3380*
Proposed Project Trips	*0*	*0*	*0*	*0*	*28*	*17*	*21*	*0*	*0*	*0*	*30*	*0*	*96*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	164	680	117	43	514	215	160	215	84	125	877	131	*3325*
													0
Background + Project Conditions	179	682	117	43	580	215	160	217	87	137	898	161	*3476*
													0

Intersection Number: 9
Traffic Node Number: 1038
Intersection Name: Easy St and Middlefield Rd
Peak Hour: PM — Date of Analysis: 10/15/21
Count Date: 05/30/19

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	68	12	58	49	594	34	8	16	46	98	1019	90	*2092*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	43	0	0	0	0	0	12	0	*55*
777 W Middlefield Rd (MV)	0	0	0	0	9	0	0	0	0	0	7	0	*16*
759 West Middlefield Road (MV)	0	0	0	0	2	0	0	0	0	0	1	0	*3*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*0*	*0*	*0*	*0*	*66*	*0*	*0*	*0*	*0*	*0*	*22*	*0*	*88*
Background Conditions	68	12	58	49	660	34	8	16	46	98	1041	90	*2180*
Proposed Project Trips	*0*	*0*	*0*	*0*	*45*	*0*	*0*	*0*	*0*	*0*	*51*	*0*	*96*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	68	12	58	49	639	34	8	16	46	98	1070	90	*2188*
													0
Background + Project Conditions	68	12	58	49	705	34	8	16	46	98	1092	90	*2276*
													0

Intersection Number: 10
Traffix Node Number: 9
Intersection Name: Whisman Rd and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	74	286	51	38	503	337	63	67	79	480	380	77	*2435*
Approved Project Trips													
EWPP List of Approved Project Trips	7	11	75	16	37	3	1	5	0	0	8	3	*166*
777 W Middlefield Rd (MV)	1	0	0	0	6	0	0	0	1	1	6	1	*16*
759 West Middlefield Road (MV)	0	0	0	0	2	0	0	0	0	0	1	0	*3*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*8*	*11*	*75*	*16*	*57*	*3*	*1*	*5*	*1*	*1*	*17*	*4*	*199*
Background Conditions	82	297	126	54	560	340	64	72	80	481	397	81	*2634*
Proposed Project Trips	*0*	*0*	*10*	*10*	*51*	*27*	*15*	*0*	*0*	*0*	*58*	*0*	*171*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	74	286	61	48	554	364	78	67	79	480	438	77	*2606*
													0
Background + Project Conditions	82	297	136	64	611	367	79	72	80	481	455	81	*2805*
													0

Intersection Number: 11
Traffix Node Number: 10
Intersection Name: Ellis Street and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	381	0	419	123	510	0	0	0	0	0	458	108	*1999*
Approved Project Trips													
EWPP List of Approved Project Trips	4	0	35	40	51	0	0	0	0	0	83	1	*214*
777 W Middlefield Rd (MV)	2	0	0	0	3	0	0	0	0	0	4	1	*10*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	1	0	*2*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*6*	*0*	*35*	*40*	*67*	*0*	*0*	*0*	*0*	*0*	*90*	*2*	*240*
Background Conditions	387	0	454	163	577	0	0	0	0	0	548	110	*2239*
Proposed Project Trips	*38*	*0*	*104*	*89*	*51*	*0*	*0*	*0*	*0*	*0*	*46*	*36*	*364*
Passby Trips	*8*	*0*	*6*	*6*	*-8*	*0*	*0*	*0*	*0*	*0*	*-7*	*7*	*12*
Existing + Project Conditions	427	0	529	218	553	0	0	0	0	0	497	151	*2375*
													0
Background + Project Conditions	433	0	564	258	620	0	0	0	0	0	587	153	*2615*
													0

Intersection Number: 12
Traffix Node Number: 11
Intersection Name: Logue Ave and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	130	2	123	32	410	24	38	1	16	3	893	49	*1721*
Approved Project Trips													
EWPP List of Approved Project Trips	2	0	0	0	89	0	0	0	0	0	106	11	*208*
777 W Middlefield Rd (MV)	2	0	0	0	1	0	0	0	0	0	2	1	*6*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	0	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*4*	*0*	*0*	*0*	*103*	*0*	*0*	*0*	*0*	*0*	*110*	*12*	*229*
Background Conditions	134	2	123	32	513	24	38	1	16	3	1003	61	*1950*
Proposed Project Trips	*70*	*0*	*6*	*9*	*71*	*0*	*0*	*0*	*0*	*0*	*45*	*105*	*306*
Passby Trips	*3*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*5*
Existing + Project Conditions	203	2	129	41	481	24	38	1	16	3	938	156	*2032*
													0
Background + Project Conditions	207	2	129	41	584	24	38	1	16	3	1048	168	*2261*
													0

Intersection Number: 13
Traffic Node Number: 12
Intersection Name: Ferguson Dr and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	0	425	138	64	0	18	86	994	0	*1725*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	89	1	0	0	0	0	106	0	*196*
777 W Middlefield Rd (MV)	0	0	0	0	1	0	0	0	0	0	2	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	0	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	12	0	0	0	0	0	2	0	*14*
Total Approved Trips	*0*	*0*	*0*	*0*	*103*	*1*	*0*	*0*	*0*	*0*	*110*	*0*	*214*
Background Conditions	0	0	0	0	528	139	64	0	18	86	1104	0	*1939*
Proposed Project Trips	*0*	*0*	*0*	*0*	*64*	*12*	*2*	*0*	*15*	*10*	*41*	*0*	*144*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	0	0	0	0	489	150	66	0	33	96	1035	0	*1869*
													0
Background + Project Conditions	0	0	0	0	592	151	66	0	33	96	1145	0	*2083*
													0

Intersection Number: 14
Traffic Node Number: 13
Intersection Name: SR 237 WB Ramps and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	330	400	191	0	230	129	0	0	0	210	849	0	*2339*
Approved Project Trips													
EWPP List of Approved Project Trips	27	79	3	0	63	23	0	0	0	54	53	0	*302*
777 W Middlefield Rd (MV)	0	0	0	0	1	0	0	0	0	0	2	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	0	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	-15	0	0	0	0	0	0	0	0	0	0	*-15*
370 San Aleso Ave. (SV)	0	-2	0	0	0	0	0	2	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	10	0	0	0	0	0	12	0	0	0	0	*22*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	1	0	0	0	0	*2*
810 W. Maude Ave (SV)	12	62	0	0	0	0	0	0	0	0	2	0	*76*
Total Approved Trips	*39*	*135*	*3*	*0*	*65*	*23*	*0*	*15*	*0*	*54*	*57*	*0*	*391*
Background Conditions	369	535	194	0	295	152	0	15	0	264	906	0	*2730*
Proposed Project Trips	*32*	*48*	*5*	*0*	*44*	*0*	*0*	*0*	*0*	*8*	*35*	*0*	*172*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	362	448	196	0	274	129	0	0	0	218	884	0	*2511*
													0
Background + Project Conditions	401	583	199	0	339	152	0	15	0	272	941	0	*2902*
													0

Intersection Number: 15
Traffic Node Number: 14
Intersection Name: SR 237 EB Ramps and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	0	0	131	303	0	114	218	86	0	799	275	*1926*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	75	0	3	22	11	0	48	7	*166*
777 W Middlefield Rd (MV)	0	0	0	0	1	0	0	0	0	0	2	0	*3*
759 West Middlefield Road (MV)	0	0	0	0	1	0	0	0	0	0	0	0	*1*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	-15	0	0	0	0	0	0	0	0	0	0	*-15*
370 San Aleso Ave. (SV)	0	-2	0	0	0	0	0	2	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	10	0	0	0	0	0	12	0	0	0	0	*22*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	1	0	0	0	0	*2*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	11	0	0	0	2	*13*
Total Approved Trips	*0*	*-6*	*0*	*0*	*77*	*0*	*3*	*48*	*11*	*0*	*50*	*9*	*192*
Background Conditions	0	-6	0	131	380	0	117	266	97	0	849	284	*2118*
Proposed Project Trips	*0*	*0*	*0*	*5*	*21*	*0*	*0*	*42*	*23*	*0*	*25*	*15*	*131*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	0	0	0	136	324	0	114	260	109	0	824	290	*2057*
													0
Background + Project Conditions	0	-6	0	136	401	0	117	308	120	0	874	299	*2249*
		0											*0*

Intersection Number: 16
Traffic Node Number: 15
Intersection Name: Bernardo Ave and Middlefield Rd
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	16	14	40	22	225	4	47	6	101	21	911	36	*1443*
Approved Project Trips													
EWPP List of Approved Project Trips	29	5	31	2	46	5	0	2	0	0	41	10	*171*
777 W Middlefield Rd (MV)	1	0	0	0	0	0	0	0	0	1	0	1	*3*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*30*	*5*	*31*	*2*	*46*	*5*	*0*	*2*	*0*	*1*	*41*	*11*	*174*
Background Conditions	46	19	71	24	271	9	47	8	101	22	952	47	*1617*
Proposed Project Trips	*0*	*0*	*0*	*0*	*13*	*0*	*0*	*0*	*10*	*10*	*12*	*0*	*45*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	16	14	40	22	238	4	47	6	111	31	923	36	*1488*
													0
Background + Project Conditions	46	19	71	24	284	9	47	8	111	32	964	47	*1662*
													0

Intersection Number: 17
Traffic Node Number: 1029
Intersection Name: Moffett Blvd and Central Expy*
Peak Hour: PM
Count Date: 11/01/18
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	343	343	65	68	993	168	74	187	148	228	1158	157	*3932*
Approved Project Trips													
EWPP List of Approved Project Trips	0	1	1	1	139	1	1	1	0	0	33	0	*178*
777 W Middlefield Rd (MV)	7	3	0	0	10	0	0	2	2	0	0	0	*24*
759 West Middlefield Road (MV)	2	1	1	0	1	0	0	1	0	0	0	0	*6*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-11	0	0	0	0	0	0	0	*-11*
370 San Aleso Ave. (SV)	0	0	0	0	-1	0	0	0	0	0	1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	4	0	0	0	0	0	5	0	*9*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	15	0	0	0	0	0	3	0	*18*
Total Approved Trips	*9*	*5*	*2*	*1*	*157*	*1*	*1*	*4*	*2*	*0*	*42*	*0*	*224*
Background Conditions	352	348	67	69	1150	169	75	191	150	228	1200	157	*4156*
Proposed Project Trips	*9*	*8*	*0*	*0*	*13*	*1*	*1*	*12*	*0*	*0*	*15*	*9*	*68*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	352	351	65	68	1006	169	75	199	148	228	1173	166	*4000*
													0
Background + Project Conditions	361	356	67	69	1163	170	76	203	150	228	1215	166	*4224*
													0

Intersection Number: 18
Traffic Node Number: 16
Intersection Name: SR 85 SB Off Ramp and Central Expy
Peak Hour: PM
Count Date: 09/28/21
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	28	0	387	0	1109	0	0	0	0	0	1726	0	*3250*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	141	0	0	0	0	0	35	0	*176*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-11	0	0	0	0	0	0	0	*-11*
370 San Aleso Ave. (SV)	0	0	0	0	-1	0	0	0	0	0	1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	4	0	0	0	0	0	5	0	*9*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	15	0	0	0	0	0	3	0	*18*
Total Approved Trips	*0*	*0*	*0*	*0*	*148*	*0*	*0*	*0*	*0*	*0*	*44*	*0*	*192*
Background Conditions	28	0	387	0	1257	0	0	0	0	0	1770	0	*3442*
Proposed Project Trips	*0*	*0*	*0*	*0*	*14*	*0*	*0*	*0*	*0*	*0*	*16*	*0*	*30*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	28	0	387	0	1123	0	0	0	0	0	1742	0	*3280*
													0
Background + Project Conditions	28	0	387	0	1271	0	0	0	0	0	1786	0	*3472*
													0

Intersection Number: 19
Traffix Node Number: 17
Intersection Name: Whisman Station Dr and Central Expy*
Peak Hour: PM
Count Date: 09/28/21
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	270	0	134	167	1184	0	0	0	0	0	1743	360	*3858*
Approved Project Trips													
EWPP List of Approved Project Trips	14	0	0	0	127	0	0	0	0	0	29	6	*176*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-11	0	0	0	0	0	0	0	*-11*
370 San Aleso Ave. (SV)	0	0	0	0	-1	0	0	0	0	0	1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	4	0	0	0	0	0	5	0	*9*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	15	0	0	0	0	0	3	0	*18*
Total Approved Trips	*14*	*0*	*0*	*0*	*134*	*0*	*0*	*0*	*0*	*0*	*38*	*6*	*192*
Background Conditions	284	0	134	167	1318	0	0	0	0	0	1781	366	*4050*
Proposed Project Trips	*-1*	*0*	*0*	*0*	*15*	*0*	*0*	*0*	*0*	*0*	*11*	*5*	*30*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	269	0	134	167	1199	0	0	0	0	0	1754	365	*3888*
													0
Background + Project Conditions	283	0	134	167	1333	0	0	0	0	0	1792	371	*4080*
													0

Intersection Number: 20
Traffix Node Number: 18
Intersection Name: Ferguson Dr and Central Expy*
Peak Hour: PM
Count Date: 09/28/21
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	97	0	71	57	1333	0	0	0	0	0	1756	109	*3423*
Approved Project Trips													
EWPP List of Approved Project Trips	1	0	0	0	127	0	0	0	0	0	29	0	*157*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-11	0	0	0	0	0	0	0	*-11*
370 San Aleso Ave. (SV)	0	0	0	0	-1	0	0	0	0	0	1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	4	0	0	0	0	0	5	0	*9*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	15	0	0	0	0	0	3	0	*18*
Total Approved Trips	*1*	*0*	*0*	*0*	*134*	*0*	*0*	*0*	*0*	*0*	*38*	*0*	*173*
Background Conditions	98	0	71	57	1467	0	0	0	0	0	1794	109	*3596*
Proposed Project Trips	*15*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*11*	*26*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	112	0	71	57	1333	0	0	0	0	0	1756	120	*3449*
													0
Background + Project Conditions	113	0	71	57	1467	0	0	0	0	0	1794	120	*3622*
													0

Intersection Number: 21
Traffix Node Number: 20
Intersection Name: Mary Ave and Central Expy*
Peak Hour: PM
Count Date: 09/28/21
Date of Analysis: 10/15/21

Scenario	Southbound Approach RT	Southbound Approach TH	Southbound Approach LT	Westbound Approach RT	Westbound Approach TH	Westbound Approach LT	Northbound Approach RT	Northbound Approach TH	Northbound Approach LT	Eastbound Approach RT	Eastbound Approach TH	Eastbound Approach LT	*Total*
Existing Conditions	115	185	185	76	1166	570	635	131	293	491	1798	91	*5736*
Approved Project Trips													
EWPP List of Approved Project Trips	17	24	0	0	115	23	5	12	7	20	74	4	*301*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	-11	0	0	0	0	0	0	0	*-11*
370 San Aleso Ave. (SV)	0	0	0	0	-1	0	0	0	0	0	1	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	4	0	0	0	0	0	5	0	*9*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	15	15	0	0	0	0	0	3	0	0	0	3	*36*
Total Approved Trips	*32*	*39*	*0*	*0*	*107*	*23*	*5*	*15*	*7*	*20*	*80*	*7*	*335*
Background Conditions	147	224	185	76	1273	593	640	146	300	511	1878	98	*6071*
Proposed Project Trips	*0*	*8*	*0*	*0*	*13*	*0*	*0*	*2*	*0*	*1*	*11*	*0*	*35*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	115	193	185	76	1179	570	635	133	293	492	1809	91	*5771*
													0
Background + Project Conditions	147	232	185	76	1286	593	640	148	300	512	1889	98	*6106*
													0

Intersection Number: 22
Traffix Node Number: 1036
Intersection Name: Mathilda Ave and Indio Ave
Peak Hour: PM
Count Date: 02/05/20
Date of Analysis: 10/15/21

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	39	2288	39	96	0	66	77	838	33	491	1	42	*4010*
Approved Project Trips													
EWPP List of Approved Project Trips	0	461	76	22	0	17	69	158	0	0	0	0	*803*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	-6	-6	-11	0	0	0	0	0	0	0	0	0	*-23*
370 San Aleso Ave. (SV)	-1	-1	-2	2	0	0	0	2	0	0	0	0	*0*
824 San Aleso Ave (SV)	4	4	8	9	0	0	0	10	0	0	0	0	*35*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	12	18	3	0	0	0	2	0	0	0	0	*35*
Total Approved Trips	*-3*	*470*	*89*	*36*	*0*	*17*	*69*	*172*	*0*	*0*	*0*	*0*	*850*
Background Conditions	36	2758	128	132	0	83	146	1010	33	491	1	42	*4860*
Proposed Project Trips	*0*	*7*	*27*	*33*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*68*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	39	2295	66	129	0	66	77	839	33	491	1	42	*4078*
													0
Background + Project Conditions	36	2765	155	165	0	83	146	1011	33	491	1	42	*4928*
													0

Intersection Number: 23
Traffix Node Number: 1039
Intersection Name: Whisman Rd and SR 237 WB Ramps
Peak Hour: PM
Count Date: 05/30/19
Date of Analysis: 10/15/21

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	697	306	432	162	12	38	387	36	267	37	15	281	*2670*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	*0*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Background Conditions	697	306	432	162	12	38	387	36	267	37	15	281	*2670*
Proposed Project Trips	*0*	*18*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*18*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	697	324	432	162	12	38	387	36	267	37	15	281	*2688*
													0
Background + Project Conditions	697	324	432	162	12	38	387	36	267	37	15	281	*2688*
													0

Intersection Number: 24
Traffix Node Number: 21
Intersection Name: Grant Road/SR 237 and El Camino Real
Peak Hour: PM
Count Date: 09/28/21
Date of Analysis: 10/15/21

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	688	913	366	23	1221	534	648	1317	189	76	1900	876	*8751*
Approved Project Trips													
EWPP List of Approved Project Trips	31	83	0	0	7	9	2	23	1	0	2	10	*168*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	-15	0	0	0	0	0	0	0	0	0	0	*-15*
370 San Aleso Ave. (SV)	0	-2	0	0	0	0	0	2	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	10	0	0	0	0	0	12	0	0	0	0	*22*
210 W. Ahwanee Ave (SV)	0	1	0	0	0	0	0	1	0	0	0	0	*2*
810 W. Maude Ave (SV)	0	32	0	0	0	0	0	6	0	0	0	0	*38*
Total Approved Trips	*31*	*109*	*0*	*0*	*7*	*9*	*2*	*44*	*1*	*0*	*2*	*10*	*215*
Background Conditions	719	1022	366	23	1228	543	650	1361	190	76	1902	886	*8966*
Proposed Project Trips	*0*	*28*	*0*	*0*	*0*	*0*	*0*	*17*	*0*	*0*	*0*	*0*	*45*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Existing + Project Conditions	688	941	366	23	1221	534	648	1334	189	76	1900	876	*8796*
													0
Background + Project Conditions	719	1050	366	23	1228	543	650	1378	190	76	1902	886	*9011*
													0

Intersection Number: 25
Traffix Node Number: 150
Intersection Name: Logue Ave and Maude Ave
Peak Hour: PM
Count Date: 09/28/21

Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	14	14	11	0	63	100	26	0	0	3	0	*231*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	0	0	0	2	11	0	0	0	0	0	*13*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Total Approved Trips	*0*	*0*	*0*	*0*	*0*	*2*	*11*	*0*	*0*	*0*	*0*	*0*	*13*
Background Conditions	0	14	14	11	0	65	111	26	0	0	3	0	*244*
Proposed Project Trips	*0*	*7*	*13*	*3*	*0*	*68*	*113*	*1*	*0*	*0*	*0*	*0*	*205*
Passby Trips	*0*	*0*	*0*	*0*	*0*	*3*	*2*	*0*	*0*	*0*	*0*	*0*	*5*
Existing + Project Conditions	0	21	27	14	0	134	215	27	0	0	3	0	*441*
													0
Background + Project Conditions	0	21	27	14	0	136	226	27	0	0	3	0	*454*
													0

Intersection Number: 26
Traffix Node Number: 149
Intersection Name: Clyde Ave and Maude Ave
Peak Hour: PM
Count Date: 09/28/21

Date of Analysis: 10/15/21

	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
Scenario	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	6	0	140	57	71	0	0	0	0	0	137	9	*420*
Approved Project Trips													
EWPP List of Approved Project Trips	0	0	7	32	2	0	0	0	0	0	11	0	*52*
777 W Middlefield Rd (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
759 West Middlefield Road (MV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
728, 740, 750, 760, 814 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
370 San Aleso Ave. (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
824 San Aleso Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
210 W. Ahwanee Ave (SV)	0	0	0	0	0	0	0	0	0	0	0	0	*0*
810 W. Maude Ave (SV)	0	0	8	44	0	0	0	0	0	0	0	0	*52*
Total Approved Trips	*0*	*0*	*15*	*76*	*2*	*0*	*0*	*0*	*0*	*0*	*11*	*0*	*104*
Background Conditions	6	0	155	133	73	0	0	0	0	0	148	9	*524*
Proposed Project Trips	*79*	*0*	*191*	*51*	*117*	*0*	*0*	*0*	*0*	*0*	*-27*	*30*	*441*
Passby Trips	*2*	*0*	*0*	*2*	*-2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*
Existing + Project Conditions	87	0	331	110	186	0	0	0	0	0	110	39	*863*
													0
Background + Project Conditions	87	0	346	186	188	0	0	0	0	0	121	39	*967*
													0

Appendix C

Level of Service Calculations

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing AM

Intersection #1: Ellis Street and Manila Drive

Signal=Stop/Rights=Include
Final Vol: 0 59 1***
Lanes: 0 0 1 1 0

Final Vol:	Lanes:	Signal=Stop Rights=Include			Signal=Stop Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	01/00/1900		0	40
	0		Cycle Time (sec):	100		0	
0	0		Loss Time (sec):	0		1!	0
	0		Critical V/C:	0.967		0	
0	0		Avg Crit Del (sec/veh):	30.9		0	303***
			Avg Delay (sec/veh):	30.9			
			LOS:	D			

Lanes: 0 0 2 0 1
Final Vol: 0 217 705***
Signal=Stop/Rights=Include

```
Street Name:             Ellis Street                        Manila Drive
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM
Base Vol:       0  217   705     1   59     0     0    0     0   303    0    40
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  217   705     1   59     0     0    0     0   303    0    40
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  217   705     1   59     0     0    0     0   303    0    40
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  217   705     1   59     0     0    0     0   303    0    40
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  217   705     1   59     0     0    0     0   303    0    40
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  217   705     1   59     0     0    0     0   303    0    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.03 1.97  0.00  0.00 0.00  0.00  0.88 0.00  0.12
Final Sat.:     0 1276   729    18 1038     0     0    0     0   535    0    71
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx 0.17  0.97  0.06 0.06  xxxx  xxxx xxxx  xxxx  0.57 xxxx  0.57
Crit Moves:             ****  ****                              ****
Delay/Veh:    0.0  9.5  46.6   9.6  9.6   0.0   0.0  0.0   0.0  16.1  0.0  16.1
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.5  46.6   9.6  9.6   0.0   0.0  0.0   0.0  16.1  0.0  16.1
LOS by Move:    *    A     E     A    A     *     *    *     *     C    *     C
ApproachDel:      37.9              9.6            xxxxxx             16.1
Delay Adj:        1.00             1.00             xxxxx             1.00
ApprAdjDel:       37.9              9.6            xxxxxx             16.1
LOS by Appr:         E                A                 *                C
AllWayAvgQ:   0.0  0.2   7.9   0.1  0.1   0.0   0.0  0.0   0.0   1.2  1.2   1.2
Note: Queue reported is the number of cars per lane.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #1 Ellis Street and Manila Drive
********************************************************************************
```

```
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0  217   705     1   59     0     0    0     0   303    0    40
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             982
Minor Approach Volume:           343
Minor Approach Volume Threshold: 291
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PM

Intersection #1: Ellis Street and Manila Drive

Signal=Stop/Rights=Include
Final Vol: 0 165 12***
Lanes: 0 0 1 1 0

Signal=Stop Rights=Include
Final Vol: Lanes:
0 0
0
0 0
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.786
Avg Crit Del (sec/veh): 17.8
Avg Delay (sec/veh): 17.8
LOS: C

Signal=Stop Rights=Include
Lanes: Final Vol:
0 5***
0
1! 0
0
0 537

Lanes: 0 0 2 0 1
Final Vol: 0 39 192***
Signal=Stop/Rights=Include

Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	39	192	12	165	0	0	0	0	537	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	192	12	165	0	0	0	0	537	0	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	192	12	165	0	0	0	0	537	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	39	192	12	165	0	0	0	0	537	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	39	192	12	165	0	0	0	0	537	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	39	192	12	165	0	0	0	0	537	0	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.14	1.86	0.00	0.00	0.00	0.00	0.99	0.00	0.01
Final Sat.:	0	1090	611	72	997	0	0	0	0	683	0	6
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.04	0.31	0.17	0.17	xxxx	xxxx	xxxx	xxxx	0.79	xxxx	0.79
Crit Moves:			****	****								****
Delay/Veh:	0.0	9.1	10.5	10.2	10.2	0.0	0.0	0.0	0.0	23.5	0.0	23.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.1	10.5	10.2	10.2	0.0	0.0	0.0	0.0	23.5	0.0	23.5
LOS by Move:	*	A	B	B	B	*	*	*	*	C	*	C
ApproachDel:		10.3			10.2			xxxxxx			23.5	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		10.3			10.2			xxxxxx			23.5	
LOS by Appr:		B			B			*			C	
AllWayAvgQ:	0.0	0.0	0.4	0.2	0.2	0.0	0.0	0.0	0.0	2.9	2.9	2.9

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Lanes:	0 0 2 0 1	0 1 1 0 0	0 0 0 0 0	0 0 1! 0 0
Initial Vol:	0 39 192	12 165 0	0 0 0	537 0 5

Major Street Volume: 542
Minor Approach Volume: 231
Minor Approach Volume Threshold: 485

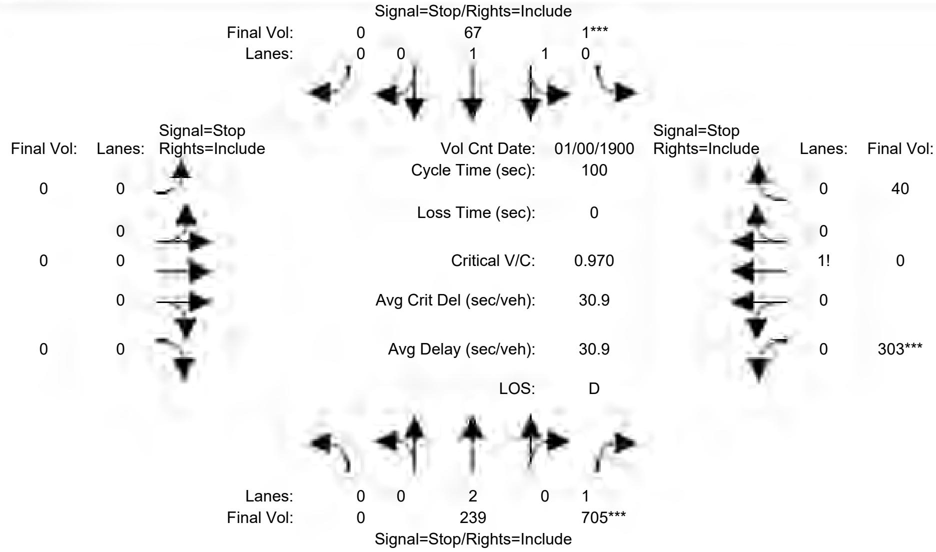
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PP AM

Intersection #1: Ellis Street and Manila Drive



Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	217	705	1	59	0	0	0	0	303	0	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	217	705	1	59	0	0	0	0	303	0	40
Added Vol:	0	22	0	0	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	239	705	1	67	0	0	0	0	303	0	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	239	705	1	67	0	0	0	0	303	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	239	705	1	67	0	0	0	0	303	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	239	705	1	67	0	0	0	0	303	0	40
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.03	1.97	0.00	0.00	0.00	0.00	0.88	0.00	0.12
Final Sat.:	0	1272	727	15	1036	0	0	0	0	534	0	70
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.19	0.97	0.06	0.06	xxxx	xxxx	xxxx	xxxx	0.57	xxxx	0.57
Crit Moves:			****	****						****		
Delay/Veh:	0.0	9.6	47.4	9.7	9.7	0.0	0.0	0.0	0.0	16.2	0.0	16.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.6	47.4	9.7	9.7	0.0	0.0	0.0	0.0	16.2	0.0	16.2
LOS by Move:	*	A	E	A	A	*	*	*	*	C	*	C
ApproachDel:		37.8			9.7			xxxxxx			16.2	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		37.8			9.7			xxxxxx			16.2	
LOS by Appr:		E			A			*			C	
AllWayAvgQ:	0.0	0.2	8.0	0.1	0.1	0.0	0.0	0.0	0.0	1.2	1.2	1.2

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

****

```
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0  239   705     1   67     0     0    0     0   303    0    40
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1012
Minor Approach Volume:           343
Minor Approach Volume Threshold: 281
--------------------------------------------------------------------------------
```

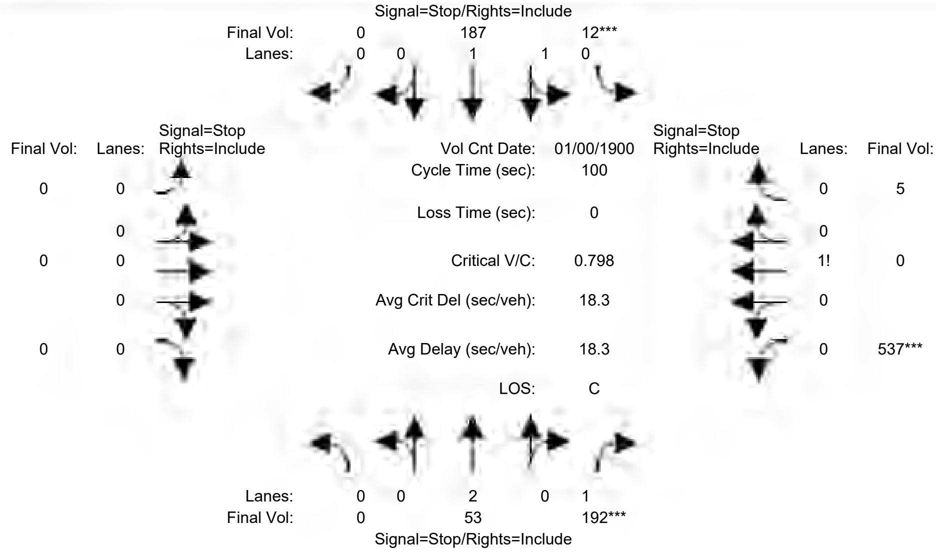
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PP PM

Intersection #1: Ellis Street and Manila Drive



Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	39	192	12	165	0	0	0	0	537	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	192	12	165	0	0	0	0	537	0	5
Added Vol:	0	14	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	53	192	12	187	0	0	0	0	537	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	53	192	12	187	0	0	0	0	537	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	53	192	12	187	0	0	0	0	537	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	53	192	12	187	0	0	0	0	537	0	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.12	1.88	0.00	0.00	0.00	0.00	0.99	0.00	0.01
Final Sat.:	0	1083	605	64	1001	0	0	0	0	673	0	6
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.32	0.19	0.19	xxxx	xxxx	xxxx	xxxx	0.80	xxxx	0.80
Crit Moves:			****	****						****		
Delay/Veh:	0.0	9.3	10.6	10.4	10.4	0.0	0.0	0.0	0.0	24.8	0.0	24.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.3	10.6	10.4	10.4	0.0	0.0	0.0	0.0	24.8	0.0	24.8
LOS by Move:	*	A	B	B	B	*	*	*	*	C	*	C
ApproachDel:		10.3			10.4			xxxxxx			24.8	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		10.3			10.4			xxxxxx			24.8	
LOS by Appr:		B			B			*			C	
AllWayAvgQ:	0.0	0.0	0.4	0.2	0.2	0.0	0.0	0.0	0.0	3.1	3.1	3.1

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

****

```
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0   53   192    12  187     0     0    0     0   537    0     5
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             542
Minor Approach Volume:           245
Minor Approach Volume Threshold: 485
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```


Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 220*** 139 0
Lanes: 0 1 1 0 0

Signal=Split Rights=Include (West side) — Final Vol: 0, 0, 0; Lanes: 0, 0, 0, 0, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.562
Avg Crit Del (sec/veh): 19.0
Avg Delay (sec/veh): 14.3
LOS: B

Signal=Split Rights=Include (East side) — Lanes: 2, 0, 0, 1, 0; Final Vol: 101, 0, 205***

Lanes: 0 1 1 0 0
Final Vol: 131*** 796 0
Signal=Protect/Rights=Include

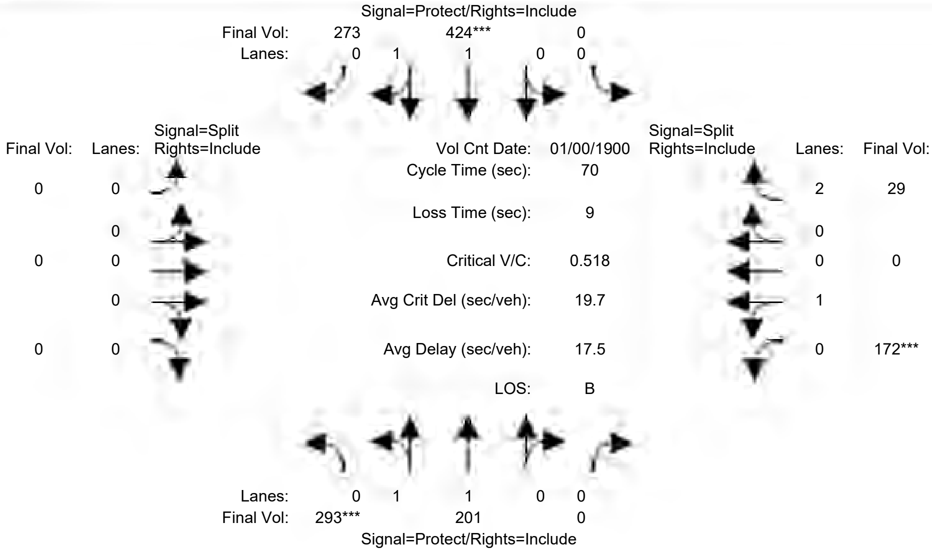
Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	131	796	0	0	139	220	0	0	0	205	0	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	131	796	0	0	139	220	0	0	0	205	0	101
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	796	0	0	139	220	0	0	0	205	0	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	796	0	0	139	220	0	0	0	205	0	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	796	0	0	139	220	0	0	0	205	0	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	796	0	0	139	220	0	0	0	205	0	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	0.29	1.71	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	523	3177	0	0	1900	1750	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.00	0.00	0.07	0.13	0.00	0.00	0.00	0.11	0.00	0.03
Crit Moves:	****					****				****		
Green/Cycle:	0.45	0.67	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.20	0.00	0.20
Volume/Cap:	0.56	0.37	0.00	0.00	0.33	0.56	0.00	0.00	0.00	0.56	0.00	0.16
Delay/Veh:	14.8	5.2	0.0	0.0	22.9	25.3	0.0	0.0	0.0	27.1	0.0	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	5.2	0.0	0.0	22.9	25.3	0.0	0.0	0.0	27.1	0.0	23.1
LOS by Move:	B	A	A	A	C+	C	A	A	A	C	A	C
HCM2kAvgQ:	7	4	0	0	3	5	0	0	0	5	0	1

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #2: Ellis Street and US-101 North Ramps



Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	293	201	0	0	424	273	0	0	0	172	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	293	201	0	0	424	273	0	0	0	172	0	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	293	201	0	0	424	273	0	0	0	172	0	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	293	201	0	0	424	273	0	0	0	172	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	293	201	0	0	424	273	0	0	0	172	0	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	293	201	0	0	424	273	0	0	0	172	0	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	1.00	1.00	0.00	0.00	1.20	0.80	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	1750	1900	0	0	2250	1449	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.17	0.11	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.10	0.00	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.32	0.69	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.18	0.00	0.18
Volume/Cap:	0.52	0.15	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.52	0.00	0.05
Delay/Veh:	19.8	3.9	0.0	0.0	17.8	17.8	0.0	0.0	0.0	27.2	0.0	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.8	3.9	0.0	0.0	17.8	17.8	0.0	0.0	0.0	27.2	0.0	23.5
LOS by Move:	B-	A	A	A	B	B	A	A	A	C	A	C
HCM2kAvgQ:	5	1	0	0	7	7	0	0	0	4	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 220*** 147 0
Lanes: 0 1 1 0 0

Signal=Split
Rights=Include
Final Vol: Lanes:
0 0
0
0 0
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.663
Avg Crit Del (sec/veh): 21.0
Avg Delay (sec/veh): 16.4
LOS: B

Signal=Split
Rights=Include
Lanes: Final Vol:
2 101
0
0 0
1
0 284***

Lanes: 0 1 1 0 0
Final Vol: 271*** 818 0
Signal=Protect/Rights=Include

Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	131	796	0	0	139	220	0	0	0	205	0	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	131	796	0	0	139	220	0	0	0	205	0	101
Added Vol:	140	22	0	0	8	0	0	0	0	79	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	271	818	0	0	147	220	0	0	0	284	0	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	271	818	0	0	147	220	0	0	0	284	0	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	271	818	0	0	147	220	0	0	0	284	0	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	271	818	0	0	147	220	0	0	0	284	0	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.98	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	0.51	1.49	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	921	2779	0	0	1900	1750	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.00	0.00	0.08	0.13	0.00	0.00	0.00	0.16	0.00	0.03
Crit Moves:	****					****				****		
Green/Cycle:	0.44	0.63	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.24	0.00	0.24
Volume/Cap:	0.66	0.46	0.00	0.00	0.41	0.66	0.00	0.00	0.00	0.66	0.00	0.13
Delay/Veh:	16.4	6.8	0.0	0.0	25.2	29.3	0.0	0.0	0.0	28.0	0.0	21.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.4	6.8	0.0	0.0	25.2	29.3	0.0	0.0	0.0	28.0	0.0	21.1
LOS by Move:	B	A	A	A	C	C	A	A	A	C	A	C+
HCM2kAvgQ:	9	6	0	0	3	6	0	0	0	7	0	1

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 273 446*** 0
Lanes: 0 1 1 0 0

Final Vol:	Lanes:	Signal=Split Rights=Include			Signal=Split Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
0	0		Cycle Time (sec):	70		2	29
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.630		0	0
	0		Avg Crit Del (sec/veh):	22.1		1	
0	0		Avg Delay (sec/veh):	20.0		0	224***
			LOS:	C+			

Lanes: 0 1 1 0 0
Final Vol: 403*** 215 0
Signal=Protect/Rights=Include

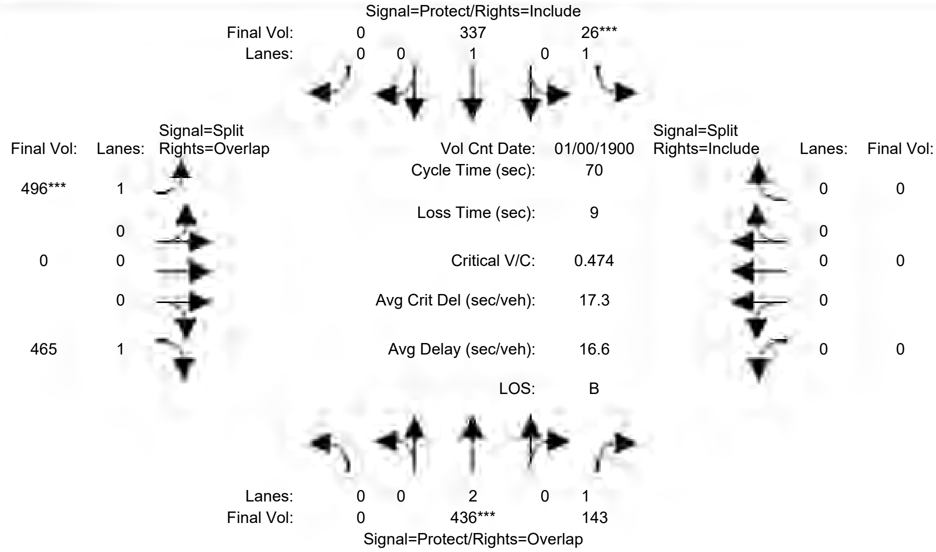
Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	293	201	0	0	424	273	0	0	0	172	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	293	201	0	0	424	273	0	0	0	172	0	29
Added Vol:	110	14	0	0	22	0	0	0	0	52	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	403	215	0	0	446	273	0	0	0	224	0	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	403	215	0	0	446	273	0	0	0	224	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	403	215	0	0	446	273	0	0	0	224	0	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	403	215	0	0	446	273	0	0	0	224	0	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	1.00	1.00	0.00	0.00	1.22	0.78	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	1750	1900	0	0	2294	1404	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.23	0.11	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.12	0.00	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.37	0.67	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.20	0.00	0.20
Volume/Cap:	0.63	0.17	0.00	0.00	0.63	0.63	0.00	0.00	0.00	0.63	0.00	0.05
Delay/Veh:	19.6	4.2	0.0	0.0	21.9	21.9	0.0	0.0	0.0	29.4	0.0	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.6	4.2	0.0	0.0	21.9	21.9	0.0	0.0	0.0	29.4	0.0	22.8
LOS by Move:	B-	A	A	A	C+	C+	A	A	A	C	A	C+
HCM2kAvgQ:	8	2	0	0	8	8	0	0	0	6	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3: Ellis Street and US-101 South Ramps



Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	436	143	26	337	0	496	0	465	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	436	143	26	337	0	496	0	465	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	436	143	26	337	0	496	0	465	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	436	143	26	337	0	496	0	465	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	436	143	26	337	0	496	0	465	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	436	143	26	337	0	496	0	465	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.08	0.01	0.18	0.00	0.28	0.00	0.27	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green/Cycle:	0.00	0.22	0.22	0.10	0.32	0.00	0.55	0.00	0.55	0.00	0.00	0.00
Volume/Cap:	0.00	0.52	0.37	0.15	0.55	0.00	0.52	0.00	0.48	0.00	0.00	0.00
Delay/Veh:	0.0	24.5	23.6	29.2	20.6	0.0	10.4	0.0	10.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.5	23.6	29.2	20.6	0.0	10.4	0.0	10.1	0.0	0.0	0.0
LOS by Move:	A	C	C	C	C+	A	B+	A	B+	A	A	A
HCM2kAvgQ:	0	4	3	1	6	0	8	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3: Ellis Street and US-101 South Ramps

Signal=Protect/Rights=Include
Final Vol: 0 500*** 90
Lanes: 0 0 1 0 1

Signal=Split
Rights=Overlap
Final Vol: Lanes:
129 1
0
0 0
0
261*** 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.473
Avg Crit Del (sec/veh): 13.2
Avg Delay (sec/veh): 16.0
LOS: B

Signal=Split
Rights=Include
Lanes: Final Vol:
0 0
0
0 0
0
0 0

Lanes: 0 0 2 0 1
Final Vol: 0*** 384 242
Signal=Protect/Rights=Overlap

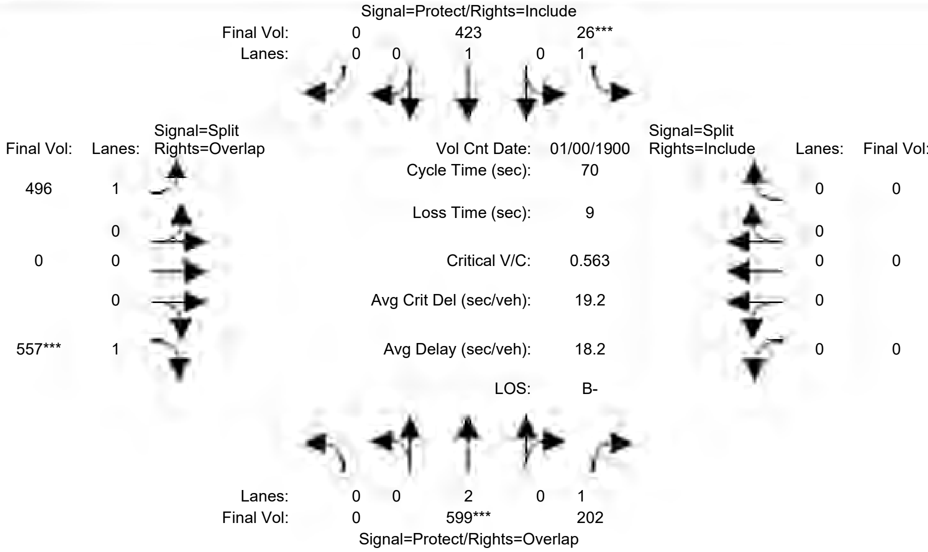
Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	384	242	90	500	0	129	0	261	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	384	242	90	500	0	129	0	261	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	384	242	90	500	0	129	0	261	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	384	242	90	500	0	129	0	261	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	384	242	90	500	0	129	0	261	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	384	242	90	500	0	129	0	261	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.14	0.05	0.26	0.00	0.07	0.00	0.15	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.00	0.33	0.33	0.23	0.56	0.00	0.32	0.00	0.32	0.00	0.00	0.00
Volume/Cap:	0.00	0.31	0.42	0.22	0.47	0.00	0.23	0.00	0.47	0.00	0.00	0.00
Delay/Veh:	0.0	17.8	18.9	22.2	9.7	0.0	17.9	0.0	19.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.8	18.9	22.2	9.7	0.0	17.9	0.0	19.9	0.0	0.0	0.0
LOS by Move:	A	B	B-	C+	A	A	B	A	B-	A	A	A
HCM2kAvgQ:	0	3	4	2	6	0	2	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #3: Ellis Street and US-101 South Ramps



Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	436	143	26	337	0	496	0	465	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	436	143	26	337	0	496	0	465	0	0	0
Added Vol:	0	163	59	0	86	0	0	0	92	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	599	202	26	423	0	496	0	557	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	599	202	26	423	0	496	0	557	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	599	202	26	423	0	496	0	557	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	599	202	26	423	0	496	0	557	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.12	0.01	0.22	0.00	0.28	0.00	0.32	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.26	0.26	0.10	0.36	0.00	0.52	0.00	0.52	0.00	0.00	0.00
Volume/Cap:	0.00	0.62	0.45	0.15	0.63	0.00	0.55	0.00	0.62	0.00	0.00	0.00
Delay/Veh:	0.0	24.2	22.7	29.2	20.6	0.0	12.2	0.0	13.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.2	22.7	29.2	20.6	0.0	12.2	0.0	13.3	0.0	0.0	0.0
LOS by Move:	A	C	C+	C	C+	A	B	A	B	A	A	A
HCM2kAvgQ:	0	6	4	1	8	0	8	0	10	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #3: Ellis Street and US-101 South Ramps

Signal=Protect/Rights=Include
Final Vol: 0 574*** 90
Lanes: 0 0 1 0 1

Final Vol:	Lanes:	Signal=Split Rights=Overlap			Signal=Split Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
129	1		Cycle Time (sec):	70		0	0
	0		Loss Time (sec):	9		0	
0	0		Critical V/C:	0.608		0	0
	0		Avg Crit Del (sec/veh):	16.1		0	
398***	1		Avg Delay (sec/veh):	17.9		0	0
			LOS:	B			

Lanes: 0 0 2 0 1
Final Vol: 0*** 508 338
Signal=Protect/Rights=Overlap

Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	384	242	90	500	0	129	0	261	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	384	242	90	500	0	129	0	261	0	0	0
Added Vol:	0	124	96	0	74	0	0	0	137	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	508	338	90	574	0	129	0	398	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	508	338	90	574	0	129	0	398	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	508	338	90	574	0	129	0	398	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	508	338	90	574	0	129	0	398	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.19	0.05	0.30	0.00	0.07	0.00	0.23	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.00	0.33	0.33	0.17	0.50	0.00	0.37	0.00	0.37	0.00	0.00	0.00
Volume/Cap:	0.00	0.41	0.59	0.30	0.61	0.00	0.20	0.00	0.61	0.00	0.00	0.00
Delay/Veh:	0.0	18.5	21.2	26.0	13.8	0.0	14.9	0.0	19.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.5	21.2	26.0	13.8	0.0	14.9	0.0	19.4	0.0	0.0	0.0
LOS by Move:	A	B-	C+	C	B	A	B	A	B-	A	A	A
HCM2kAvgQ:	0	4	7	2	9	0	2	0	8	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #4: Ellis Street and Fairchild Drive

Signal=Protect/Rights=Include

Final Vol:	103		456***		224
Lanes:	1	0	1	0	1

West approach: Signal=Permit, Rights=Include

Final Vol:	Lanes:
155	0
	0
18***	1!
	0
13	0

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	70
Loss Time (sec):	9
Critical V/C:	0.405
Avg Crit Del (sec/veh):	14.4
Avg Delay (sec/veh):	16.2
LOS:	B

East approach: Signal=Permit, Rights=Include

Lanes:	Final Vol:
0	53
0	
1!	25
0	
0	27

Lanes:	1	0	1	1	0
Final Vol:	12***		354		35

Signal=Protect/Rights=Include

Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	12	354	35	224	456	103	155	18	13	27	25	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	354	35	224	456	103	155	18	13	27	25	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	354	35	224	456	103	155	18	13	27	25	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	354	35	224	456	103	155	18	13	27	25	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	354	35	224	456	103	155	18	13	27	25	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	354	35	224	456	103	155	18	13	27	25	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.82	0.18	1.00	1.00	1.00	0.83	0.10	0.07	0.26	0.24	0.50
Final Sat.:	1750	3367	333	1750	1900	1750	1458	169	122	450	417	883
Capacity Analysis Module:												
Vol/Sat:	0.01	0.11	0.11	0.13	0.24	0.06	0.11	0.11	0.11	0.06	0.06	0.06
Crit Moves:	****				****			****				
Green/Cycle:	0.10	0.33	0.33	0.30	0.53	0.53	0.24	0.24	0.24	0.24	0.24	0.24
Volume/Cap:	0.07	0.31	0.31	0.43	0.45	0.11	0.45	0.45	0.45	0.25	0.25	0.25
Delay/Veh:	28.7	17.5	17.5	20.2	10.3	8.1	23.6	23.6	23.6	22.0	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	17.5	17.5	20.2	10.3	8.1	23.6	23.6	23.6	22.0	22.0	22.0
LOS by Move:	C	B	B	C+	B+	A	C	C	C	C+	C+	C+
HCM2kAvgQ:	0	3	3	4	6	1	4	4	4	2	2	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #4: Ellis Street and Fairchild Drive

Signal=Protect/Rights=Include
Final Vol: 230 439*** 88
Lanes: 1 0 1 0 1

Signal=Permit
Rights=Include
Final Vol: 111, 9, 11
Lanes: 0 0 1! 0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.431
Avg Crit Del (sec/veh): 15.9
Avg Delay (sec/veh): 16.0
LOS: B

Signal=Permit
Rights=Include
Lanes: 0 0 1! 0 0
Final Vol: 196, 26***, 25

Lanes: 1 0 1 1 0
Final Vol: 6*** 323 23
Signal=Protect/Rights=Include

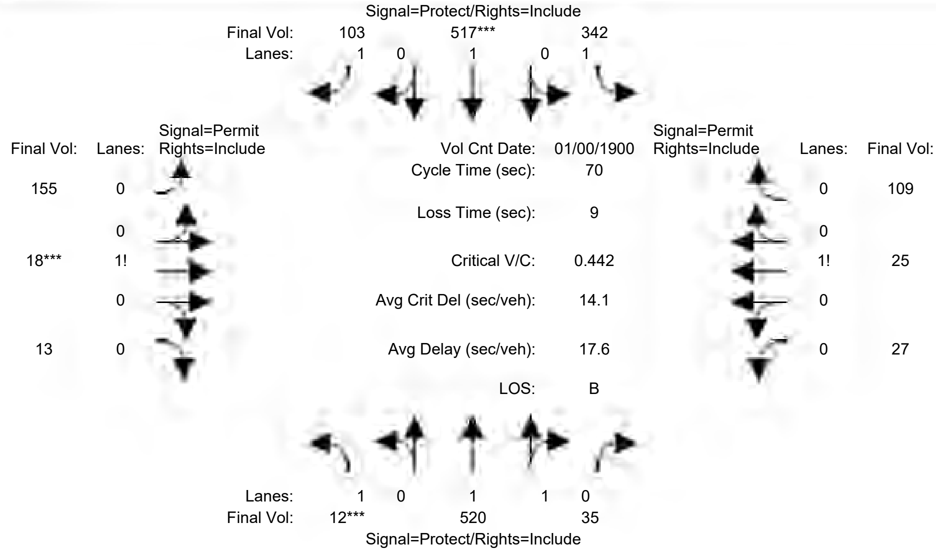
Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	6	323	23	88	439	230	111	9	11	25	26	196
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	323	23	88	439	230	111	9	11	25	26	196
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	323	23	88	439	230	111	9	11	25	26	196
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	323	23	88	439	230	111	9	11	25	26	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	323	23	88	439	230	111	9	11	25	26	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	323	23	88	439	230	111	9	11	25	26	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.86	0.14	1.00	1.00	1.00	0.85	0.07	0.08	0.10	0.11	0.79
Final Sat.:	1750	3454	246	1750	1900	1750	1483	120	147	177	184	1389
Capacity Analysis Module:												
Vol/Sat:	0.00	0.09	0.09	0.05	0.23	0.13	0.07	0.07	0.07	0.14	0.14	0.14
Crit Moves:	****				****						****	
Green/Cycle:	0.10	0.34	0.34	0.24	0.48	0.48	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.03	0.27	0.27	0.21	0.48	0.27	0.26	0.26	0.26	0.48	0.48	0.48
Delay/Veh:	28.5	16.9	16.9	21.6	12.8	11.1	19.2	19.2	19.2	21.1	21.1	21.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.5	16.9	16.9	21.6	12.8	11.1	19.2	19.2	19.2	21.1	21.1	21.1
LOS by Move:	C	B	B	C+	B	B+	B-	B-	B-	C+	C+	C+
HCM2kAvgQ:	0	3	3	2	6	3	2	2	2	5	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #4: Ellis Street and Fairchild Drive



Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	12	354	35	224	456	103	155	18	13	27	25	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	354	35	224	456	103	155	18	13	27	25	53
Added Vol:	0	166	0	118	61	0	0	0	0	0	0	56
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	520	35	342	517	103	155	18	13	27	25	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	520	35	342	517	103	155	18	13	27	25	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	520	35	342	517	103	155	18	13	27	25	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	520	35	342	517	103	155	18	13	27	25	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.87	0.13	1.00	1.00	1.00	0.83	0.10	0.07	0.17	0.15	0.68
Final Sat.:	1750	3466	233	1750	1900	1750	1458	169	122	293	272	1185
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.20	0.27	0.06	0.11	0.11	0.11	0.09	0.09	0.09
Crit Moves:	****				****			****				
Green/Cycle:	0.10	0.28	0.28	0.37	0.55	0.55	0.22	0.22	0.22	0.22	0.22	0.22
Volume/Cap:	0.07	0.53	0.53	0.53	0.49	0.11	0.49	0.49	0.49	0.42	0.42	0.42
Delay/Veh:	28.7	21.6	21.6	18.1	9.9	7.4	25.0	25.0	25.0	24.4	24.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	21.6	21.6	18.1	9.9	7.4	25.0	25.0	25.0	24.4	24.4	24.4
LOS by Move:	C	C+	C+	B-	A	A	C	C	C	C	C	C
HCM2kAvgQ:	0	6	6	6	7	1	4	4	4	4	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #4: Ellis Street and Fairchild Drive

Signal=Protect/Rights=Include

Final Vol: 230 603*** 135
Lanes: 1 0 1 0 1

Final Vol:	Lanes:	Signal=Permit Rights=Include			Signal=Permit Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
111	0		Cycle Time (sec):	70		0	329
			Loss Time (sec):	9			
	0					0	
9	1!		Critical V/C:	0.617		1!	26***
	0		Avg Crit Del (sec/veh):	20.4		0	
11	0		Avg Delay (sec/veh):	18.9		0	25
			LOS:	B-			

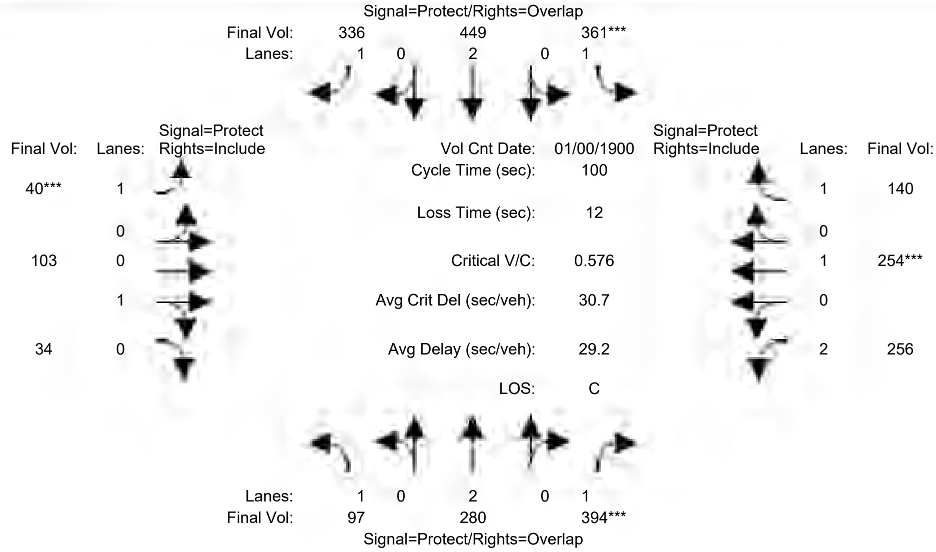
Lanes: 1 0 1 1 0
Final Vol: 6*** 410 23
Signal=Protect/Rights=Include

```
Street Name:            Ellis Street                   Fairchild Drive
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM
Base Vol:       6  323    23    88  439   230   111    9    11    25   26   196
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    6  323    23    88  439   230   111    9    11    25   26   196
Added Vol:      0   87     0    47  164     0     0    0     0     0    0   133
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    6  410    23   135  603   230   111    9    11    25   26   329
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     6  410    23   135  603   230   111    9    11    25   26   329
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    6  410    23   135  603   230   111    9    11    25   26   329
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    6  410    23   135  603   230   111    9    11    25   26   329
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 1.00  0.92  0.92 0.92  0.92  0.92 0.92  0.92
Lanes:       1.00 1.89  0.11  1.00 1.00  1.00  0.85 0.07  0.08  0.06 0.07  0.87
Final Sat.:  1750 3503   197  1750 1900  1750  1483  120   147   115  120  1515
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.12  0.12  0.08 0.32  0.13  0.07 0.07  0.07  0.22 0.22  0.22
Crit Moves:  ****                  ****                               ****
Green/Cycle: 0.10 0.33  0.33  0.23 0.46  0.46  0.31 0.31  0.31  0.31 0.31  0.31
Volume/Cap:  0.03 0.36  0.36  0.34 0.69  0.29  0.24 0.24  0.24  0.69 0.69  0.69
Delay/Veh:   28.5 18.1  18.1  23.0 17.5  12.0  18.1 18.1  18.1  24.9 24.9  24.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  28.5 18.1  18.1  23.0 17.5  12.0  18.1 18.1  18.1  24.9 24.9  24.9
LOS by Move:    C   B-    B-    C+    B     B    B-   B-    B-     C    C     C
HCM2kAvgQ:      0    4     4     3   10     3     2    2     2     9    9     9
Note: Queue reported is the number of cars per lane.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #5: Maude Avenue and SR 237 Ramps



Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	97	280	394	361	449	336	40	103	34	256	254	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	280	394	361	449	336	40	103	34	256	254	140
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	280	394	361	449	336	40	103	34	256	254	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	280	394	361	449	336	40	103	34	256	254	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	280	394	361	449	336	40	103	34	256	254	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	280	394	361	449	336	40	103	34	256	254	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.75	0.25	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1353	447	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.07	0.23	0.21	0.12	0.19	0.02	0.08	0.08	0.08	0.13	0.08
Crit Moves:			****	****			****				****	
Green/Cycle:	0.17	0.24	0.37	0.35	0.41	0.48	0.07	0.16	0.16	0.13	0.22	0.22
Volume/Cap:	0.32	0.31	0.60	0.60	0.28	0.40	0.33	0.47	0.47	0.62	0.60	0.36
Delay/Veh:	37.0	31.3	27.0	28.6	19.5	16.7	45.8	39.2	39.2	43.8	37.1	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	31.3	27.0	28.6	19.5	16.7	45.8	39.2	39.2	43.8	37.1	33.3
LOS by Move:	D+	C	C	C	B-	B	D	D	D	D	D+	C-
HCM2kAvgQ:	3	4	11	10	5	7	2	4	4	5	7	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #5: Maude Avenue and SR 237 Ramps

Signal=Protect/Rights=Overlap
Final Vol: 70 352 117***
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
76	1		Cycle Time (sec):	110		1	286
	0		Loss Time (sec):	12		0	
278***	0		Critical V/C:	0.528		1	85
	1		Avg Crit Del (sec/veh):	35.8		0	
138	0		Avg Delay (sec/veh):	34.3		2	348***
			LOS:	C-			

Lanes: 1 0 2 0 1
Final Vol: 37 236*** 342
Signal=Protect/Rights=Overlap

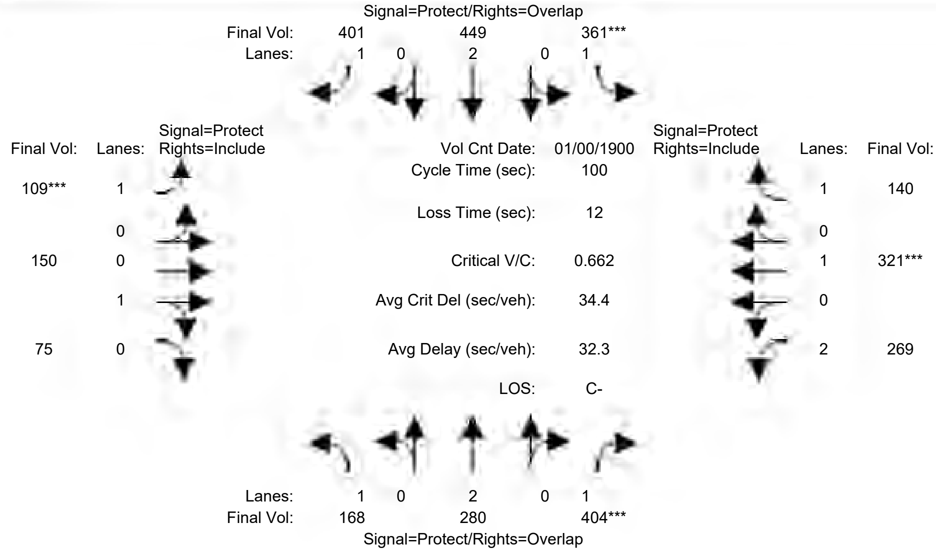
Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	37	236	342	117	352	70	76	278	138	348	85	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	236	342	117	352	70	76	278	138	348	85	286
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	236	342	117	352	70	76	278	138	348	85	286
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	236	342	117	352	70	76	278	138	348	85	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	236	342	117	352	70	76	278	138	348	85	286
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	236	342	117	352	70	76	278	138	348	85	286
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.67	0.33	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1203	597	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.20	0.07	0.09	0.04	0.04	0.23	0.23	0.11	0.04	0.16
Crit Moves:		****		****				****		****		
Green/Cycle:	0.10	0.12	0.33	0.13	0.14	0.33	0.18	0.44	0.44	0.21	0.47	0.47
Volume/Cap:	0.21	0.53	0.60	0.53	0.64	0.12	0.24	0.53	0.53	0.53	0.10	0.35
Delay/Veh:	46.2	46.9	32.7	47.3	46.9	26.1	38.9	23.3	23.3	39.5	16.5	19.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	46.9	32.7	47.3	46.9	26.1	38.9	23.3	23.3	39.5	16.5	19.0
LOS by Move:	D	D	C-	D	D	C	D+	C	C	D	B	B-
HCM2kAvgQ:	1	4	11	5	7	2	2	11	11	6	2	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #5: Maude Avenue and SR 237 Ramps



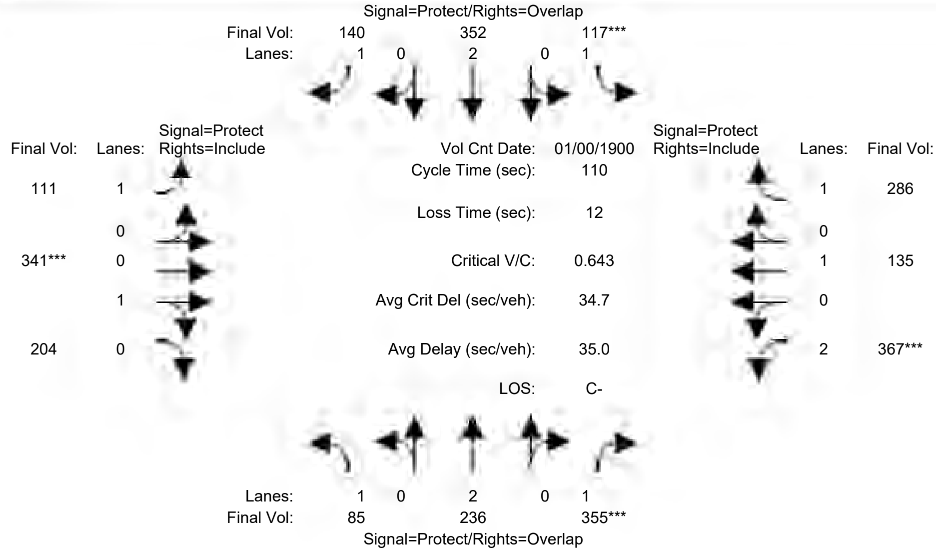
Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	97	280	394	361	449	336	40	103	34	256	254	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	280	394	361	449	336	40	103	34	256	254	140
Added Vol:	71	0	10	0	0	65	69	47	41	13	67	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	280	404	361	449	401	109	150	75	269	321	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	280	404	361	449	401	109	150	75	269	321	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	280	404	361	449	401	109	150	75	269	321	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	280	404	361	449	401	109	150	75	269	321	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.67	0.33	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1200	600	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.07	0.23	0.21	0.12	0.23	0.06	0.13	0.13	0.09	0.17	0.08
Crit Moves:			****	****			****				****	
Green/Cycle:	0.19	0.22	0.36	0.31	0.34	0.43	0.09	0.21	0.21	0.14	0.26	0.26
Volume/Cap:	0.50	0.34	0.64	0.66	0.35	0.53	0.66	0.60	0.60	0.60	0.66	0.31
Delay/Veh:	37.1	33.1	28.7	32.9	25.1	21.7	53.5	38.7	38.7	42.6	36.8	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	33.1	28.7	32.9	25.1	21.7	53.5	38.7	38.7	42.6	36.8	30.6
LOS by Move:	D+	C-	C	C-	C	C+	D-	D+	D+	D	D+	C
HCM2kAvgQ:	5	4	12	11	5	10	5	7	7	5	9	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #5: Maude Avenue and SR 237 Ramps



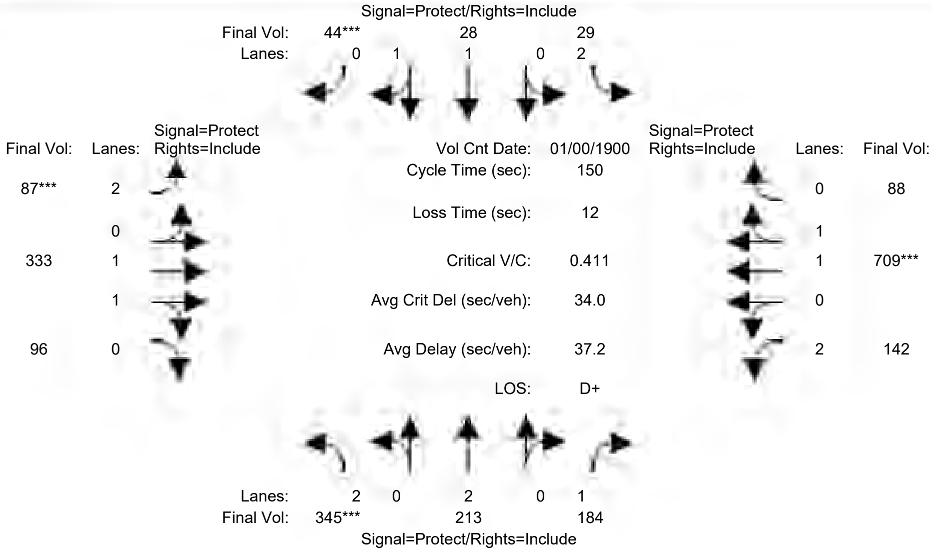
Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	37	236	342	117	352	70	76	278	138	348	85	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	236	342	117	352	70	76	278	138	348	85	286
Added Vol:	48	0	13	0	0	70	35	63	66	19	50	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	236	355	117	352	140	111	341	204	367	135	286
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	236	355	117	352	140	111	341	204	367	135	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	236	355	117	352	140	111	341	204	367	135	286
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	236	355	117	352	140	111	341	204	367	135	286
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.63	0.37	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1126	674	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.20	0.07	0.09	0.08	0.06	0.30	0.30	0.12	0.07	0.16
Crit Moves:			****	****				****		****		
Green/Cycle:	0.10	0.13	0.32	0.10	0.14	0.32	0.18	0.47	0.47	0.18	0.47	0.47
Volume/Cap:	0.50	0.46	0.64	0.64	0.66	0.25	0.35	0.64	0.64	0.64	0.15	0.35
Delay/Veh:	49.4	44.6	34.9	54.9	47.6	27.5	39.9	23.8	23.8	44.2	16.7	18.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	44.6	34.9	54.9	47.6	27.5	39.9	23.8	23.8	44.2	16.7	18.8
LOS by Move:	D	D	C-	D-	D	C	D	C	C	D	B	B-
HCM2kAvgQ:	4	4	12	5	7	4	4	15	15	7	2	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #7: Maude Avenue and Mary Avenue



Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	345	213	184	29	28	44	87	333	96	142	709	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	213	184	29	28	44	87	333	96	142	709	88
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	345	213	184	29	28	44	87	333	96	142	709	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	345	213	184	29	28	44	87	333	96	142	709	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	213	184	29	28	44	87	333	96	142	709	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	213	184	29	28	44	87	333	96	142	709	88
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.54	0.46	2.00	1.77	0.23
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	2871	828	3150	3291	408
Capacity Analysis Module:												
Vol/Sat:	0.11	0.06	0.11	0.01	0.01	0.03	0.03	0.12	0.12	0.05	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.27	0.23	0.23	0.10	0.07	0.07	0.07	0.42	0.42	0.17	0.52	0.52
Volume/Cap:	0.41	0.24	0.46	0.09	0.22	0.38	0.41	0.28	0.28	0.27	0.41	0.41
Delay/Veh:	45.8	47.3	50.6	61.2	66.7	68.3	68.5	28.7	28.7	54.5	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.8	47.3	50.6	61.2	66.7	68.3	68.5	28.7	28.7	54.5	22.0	22.0
LOS by Move:	D	D	D	E	E	E	E	C	C	D-	C+	C+
HCM2kAvgQ:	8	4	8	1	1	2	3	6	6	3	11	11

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #7: Maude Avenue and Mary Avenue

Signal=Protect/Rights=Include
Final Vol: 71 300*** 74
Lanes: 0 1 1 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
30	2		Cycle Time (sec):	130		0	34
	0		Loss Time (sec):	12		1	
440***	1		Critical V/C:	0.475		1	336
	1		Avg Crit Del (sec/veh):	35.5		0	
387	0		Avg Delay (sec/veh):	35.5		2	234***
			LOS:	D+			

Lanes: 2 0 2 0 1
Final Vol: 104*** 31 140
Signal=Protect/Rights=Include

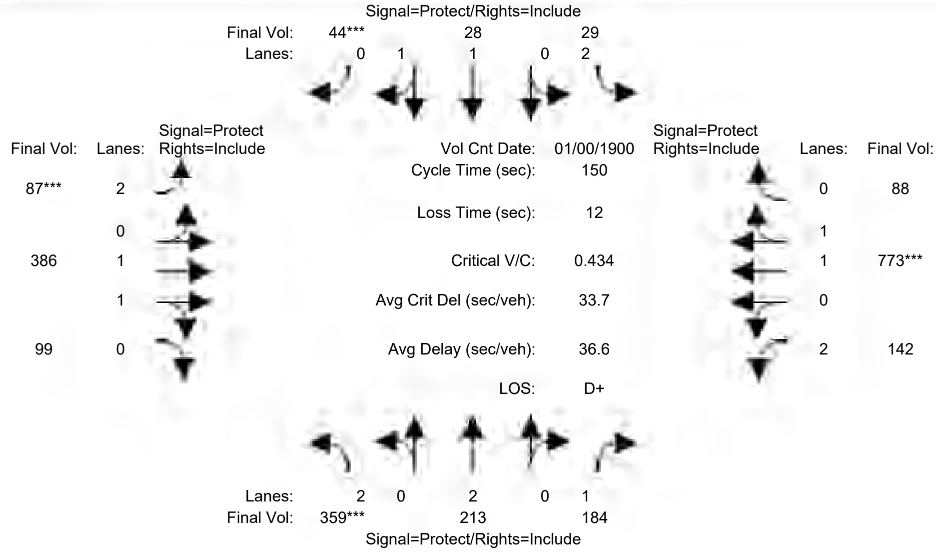
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	104	31	140	74	300	71	30	440	387	234	336	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	31	140	74	300	71	30	440	387	234	336	34
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	31	140	74	300	71	30	440	387	234	336	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	31	140	74	300	71	30	440	387	234	336	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	31	140	74	300	71	30	440	387	234	336	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	31	140	74	300	71	30	440	387	234	336	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	1.61	0.39	2.00	1.04	0.96	2.00	1.81	0.19
Final Sat.:	3150	3800	1750	3150	2991	708	3150	1967	1730	3150	3360	340
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.08	0.02	0.10	0.10	0.01	0.22	0.22	0.07	0.10	0.10
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.17	0.17	0.11	0.21	0.21	0.22	0.47	0.47	0.16	0.41	0.41
Volume/Cap:	0.48	0.05	0.48	0.21	0.48	0.48	0.04	0.48	0.48	0.48	0.25	0.25
Delay/Veh:	59.8	45.4	50.2	52.7	45.4	45.4	40.0	23.7	23.7	50.7	25.4	25.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.8	45.4	50.2	52.7	45.4	45.4	40.0	23.7	23.7	50.7	25.4	25.4
LOS by Move:	E+	D	D	D-	D	D	D	C	C	D	C	C
HCM2kAvgQ:	3	1	6	2	7	7	1	11	11	6	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #7: Maude Avenue and Mary Avenue



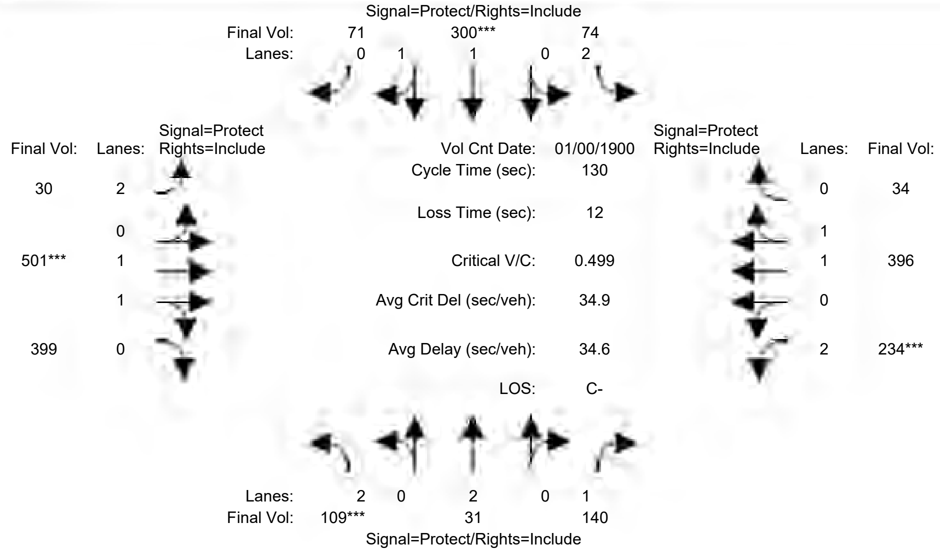
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	345	213	184	29	28	44	87	333	96	142	709	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	213	184	29	28	44	87	333	96	142	709	88
Added Vol:	14	0	0	0	0	0	0	53	3	0	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	359	213	184	29	28	44	87	386	99	142	773	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	359	213	184	29	28	44	87	386	99	142	773	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	213	184	29	28	44	87	386	99	142	773	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	359	213	184	29	28	44	87	386	99	142	773	88
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.58	0.42	2.00	1.79	0.21
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	2944	755	3150	3322	378
Capacity Analysis Module:												
Vol/Sat:	0.11	0.06	0.11	0.01	0.01	0.03	0.03	0.13	0.13	0.05	0.23	0.23
Crit Moves:	****					****	****				****	
Green/Cycle:	0.26	0.23	0.23	0.10	0.07	0.07	0.06	0.44	0.44	0.16	0.53	0.53
Volume/Cap:	0.44	0.25	0.46	0.09	0.22	0.38	0.44	0.30	0.30	0.29	0.44	0.44
Delay/Veh:	46.8	47.7	51.1	61.4	66.7	68.3	69.3	27.4	27.4	56.3	21.7	21.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.8	47.7	51.1	61.4	66.7	68.3	69.3	27.4	27.4	56.3	21.7	21.7
LOS by Move:	D	D	D-	E	E	E	E	C	C	E+	C+	C+
HCM2kAvgQ:	8	4	8	1	1	2	3	7	7	4	12	12

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #7: Maude Avenue and Mary Avenue



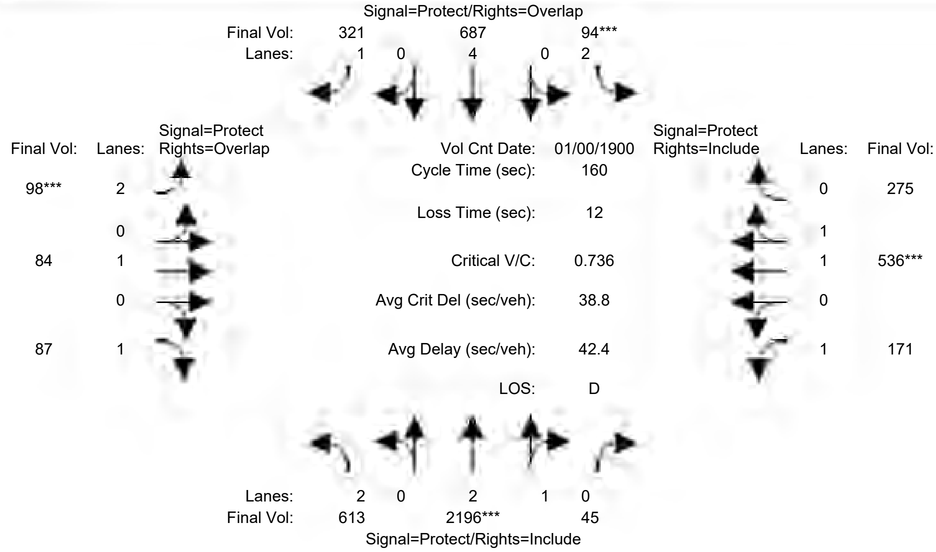
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	104	31	140	74	300	71	30	440	387	234	336	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	31	140	74	300	71	30	440	387	234	336	34
Added Vol:	5	0	0	0	0	0	0	61	12	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	31	140	74	300	71	30	501	399	234	396	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	31	140	74	300	71	30	501	399	234	396	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	31	140	74	300	71	30	501	399	234	396	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	31	140	74	300	71	30	501	399	234	396	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.99	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	1.61	0.39	2.00	1.09	0.91	2.00	1.84	0.16
Final Sat.:	3150	3800	1750	3150	2991	708	3150	2058	1639	3150	3407	293
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.08	0.02	0.10	0.10	0.01	0.24	0.24	0.07	0.12	0.12
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.16	0.16	0.11	0.20	0.20	0.20	0.49	0.49	0.15	0.44	0.44
Volume/Cap:	0.50	0.05	0.49	0.22	0.50	0.50	0.05	0.50	0.50	0.50	0.27	0.27
Delay/Veh:	60.1	46.1	51.0	53.2	46.6	46.6	41.8	22.7	22.7	51.7	23.5	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.1	46.1	51.0	53.2	46.6	46.6	41.8	22.7	22.7	51.7	23.5	23.5
LOS by Move:	E	D	D-	D-	D	D	D	C+	C+	D-	C	C
HCM2kAvgQ:	3	1	6	2	7	7	1	12	12	6	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #8: Maude Avenue and Mathilda Avenue



Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

	L	T	R	L	T	R	L	T	R	L	T	R
Base Vol:	613	2196	45	94	687	321	98	84	87	171	536	275
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	2196	45	94	687	321	98	84	87	171	536	275
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	613	2196	45	94	687	321	98	84	87	171	536	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	613	2196	45	94	687	321	98	84	87	171	536	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	613	2196	45	94	687	321	98	84	87	171	536	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	613	2196	45	94	687	321	98	84	87	171	536	275

Saturation Flow Module:

	L	T	R	L	T	R	L	T	R	L	T	R
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	0.99	0.95
Lanes:	2.00	2.94	0.06	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.30	0.70
Final Sat.:	3150	5487	112	3150	7600	1750	3150	1900	1750	1750	2444	1254

Capacity Analysis Module:

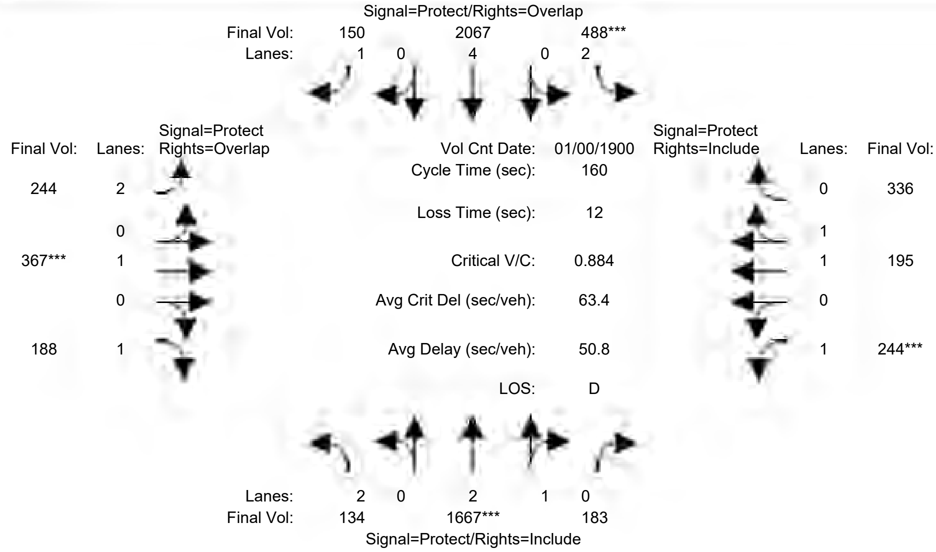
	L	T	R	L	T	R	L	T	R	L	T	R
Vol/Sat:	0.19	0.40	0.40	0.03	0.09	0.18	0.03	0.04	0.05	0.10	0.22	0.22
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.54	0.54	0.04	0.26	0.30	0.04	0.13	0.46	0.21	0.30	0.30
Volume/Cap:	0.59	0.74	0.74	0.68	0.35	0.61	0.71	0.33	0.11	0.47	0.74	0.74
Delay/Veh:	45.8	29.1	29.1	88.5	48.7	50.0	91.4	63.7	24.5	56.7	53.4	53.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.8	29.1	29.1	88.5	48.7	50.0	91.4	63.7	24.5	56.7	53.4	53.4
LOS by Move:	D	C	C	F	D	D	F	E	C	E+	D-	D-
HCM2kAvgQ:	14	27	27	4	7	15	3	4	2	8	19	19

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #8: Maude Avenue and Mathilda Avenue



Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Base Vol:	134	1667	183	488	2067	150	244	367	188	244	195	336
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	1667	183	488	2067	150	244	367	188	244	195	336
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	134	1667	183	488	2067	150	244	367	188	244	195	336
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	134	1667	183	488	2067	150	244	367	188	244	195	336
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	1667	183	488	2067	150	244	367	188	244	195	336
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	1667	183	488	2067	150	244	367	188	244	195	336

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5045	554	3150	7600	1750	3150	1900	1750	1750	1900	1750

Capacity Analysis Module:

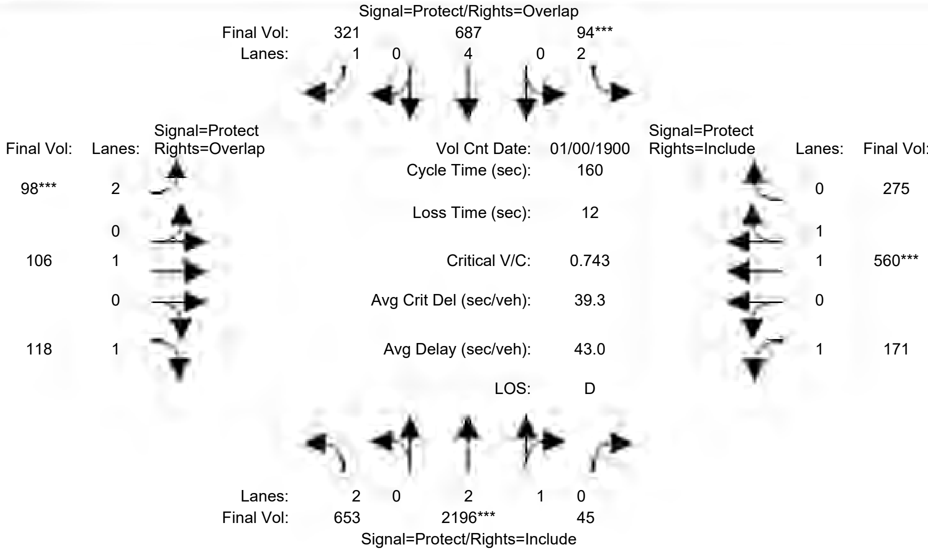
Vol/Sat:	0.04	0.33	0.33	0.15	0.27	0.09	0.08	0.19	0.11	0.14	0.10	0.19
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.37	0.37	0.18	0.47	0.58	0.11	0.22	0.29	0.16	0.27	0.27
Volume/Cap:	0.56	0.88	0.88	0.88	0.58	0.15	0.72	0.88	0.36	0.88	0.38	0.72
Delay/Veh:	74.3	51.8	51.8	80.0	30.8	15.4	76.1	80.2	45.1	92.8	47.9	56.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.3	51.8	51.8	80.0	30.8	15.4	76.1	80.2	45.1	92.8	47.9	56.4
LOS by Move:	E	D-	D-	F	C	B	E-	F	D	F	D	E+
HCM2kAvgQ:	4	30	30	17	18	3	7	18	8	16	8	17

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #8: Maude Avenue and Mathilda Avenue



Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	613	2196	45	94	687	321	98	84	87	171	536	275
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	613	2196	45	94	687	321	98	84	87	171	536	275
Added Vol:	40	0	0	0	0	0	0	22	31	0	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	653	2196	45	94	687	321	98	106	118	171	560	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	653	2196	45	94	687	321	98	106	118	171	560	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	653	2196	45	94	687	321	98	106	118	171	560	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	653	2196	45	94	687	321	98	106	118	171	560	275
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	0.99	0.95
Lanes:	2.00	2.94	0.06	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.32	0.68
Final Sat.:	3150	5487	112	3150	7600	1750	3150	1900	1750	1750	2481	1218
Capacity Analysis Module:												
Vol/Sat:	0.21	0.40	0.40	0.03	0.09	0.18	0.03	0.06	0.07	0.10	0.23	0.23
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.54	0.54	0.04	0.25	0.29	0.04	0.13	0.47	0.21	0.30	0.30
Volume/Cap:	0.62	0.75	0.75	0.68	0.37	0.63	0.71	0.41	0.14	0.46	0.75	0.75
Delay/Veh:	45.9	29.9	29.9	88.5	50.2	52.2	91.4	64.5	24.3	56.1	53.2	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	29.9	29.9	88.5	50.2	52.2	91.4	64.5	24.3	56.1	53.2	53.2
LOS by Move:	D	C	C	F	D	D-	F	E	C	E+	D-	D-
HCM2kAvgQ:	15	27	27	4	7	15	3	5	3	8	20	20

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #8: Maude Avenue and Mathilda Avenue

Signal=Protect/Rights=Overlap
Final Vol: 150 2067 488***
Lanes: 1 0 4 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
244	2		Vol Cnt Date:	01/00/1900		0	336
			Cycle Time (sec):	160			
	0		Loss Time (sec):	12		1	
394***	1		Critical V/C:	0.900		1	221
	0		Avg Crit Del (sec/veh):	65.5		0	
222	1		Avg Delay (sec/veh):	52.6		1	244***
			LOS:	D-			

Lanes: 2 0 2 1 0
Final Vol: 168 1667*** 183
Signal=Protect/Rights=Include

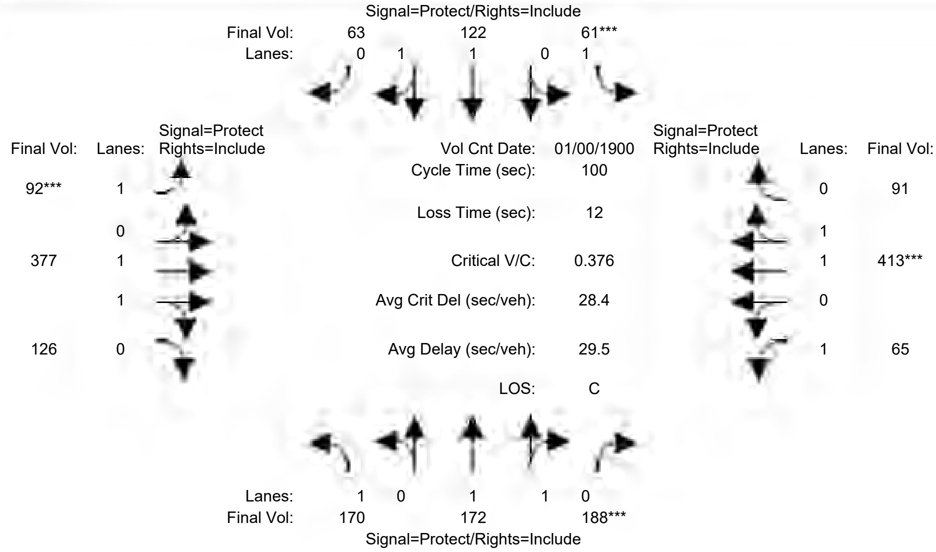
Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	134	1667	183	488	2067	150	244	367	188	244	195	336
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	1667	183	488	2067	150	244	367	188	244	195	336
Added Vol:	34	0	0	0	0	0	0	27	34	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	1667	183	488	2067	150	244	394	222	244	221	336
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	1667	183	488	2067	150	244	394	222	244	221	336
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	1667	183	488	2067	150	244	394	222	244	221	336
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	1667	183	488	2067	150	244	394	222	244	221	336
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5045	554	3150	7600	1750	3150	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.33	0.15	0.27	0.09	0.08	0.21	0.13	0.14	0.12	0.19
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.37	0.37	0.17	0.45	0.56	0.11	0.23	0.32	0.15	0.27	0.27
Volume/Cap:	0.60	0.90	0.90	0.90	0.60	0.15	0.70	0.90	0.40	0.90	0.42	0.70
Delay/Veh:	73.9	53.7	53.7	82.7	33.4	16.9	74.7	80.8	43.0	96.4	47.8	54.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.9	53.7	53.7	82.7	33.4	16.9	74.7	80.8	43.0	96.4	47.8	54.9
LOS by Move:	E	D-	D-	F	C-	B	E	F	D	F	D	D-
HCM2kAvgQ:	5	31	31	17	19	4	7	20	9	16	9	17

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #9: East Middlefield Road and Whisman Road



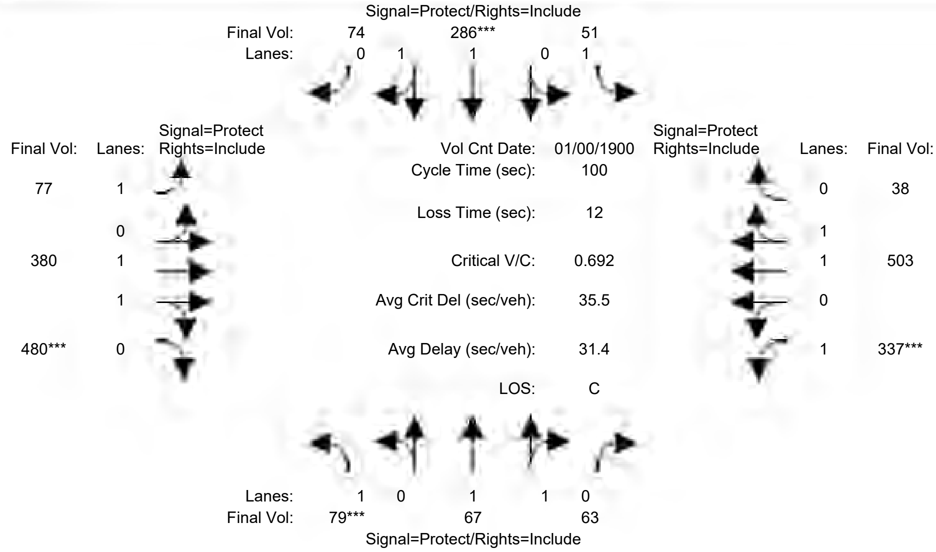
Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	170	172	188	61	122	63	92	377	126	65	413	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	172	188	61	122	63	92	377	126	65	413	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	172	188	61	122	63	92	377	126	65	413	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	172	188	61	122	63	92	377	126	65	413	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	172	188	61	122	63	92	377	126	65	413	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	172	188	61	122	63	92	377	126	65	413	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.00	1.00	1.00	1.30	0.70	1.00	1.49	0.51	1.00	1.63	0.37
Final Sat.:	1750	1900	1750	1750	2439	1260	1750	2772	927	1750	3031	668
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.11	0.03	0.05	0.05	0.05	0.14	0.14	0.04	0.14	0.14
Crit Moves:			****	****			****				****	
Green/Cycle:	0.19	0.28	0.28	0.10	0.19	0.19	0.14	0.33	0.33	0.17	0.36	0.36
Volume/Cap:	0.51	0.32	0.38	0.35	0.26	0.26	0.38	0.41	0.41	0.22	0.38	0.38
Delay/Veh:	37.5	28.4	29.1	43.2	34.6	34.6	40.2	26.3	26.3	36.2	24.0	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	28.4	29.1	43.2	34.6	34.6	40.2	26.3	26.3	36.2	24.0	24.0
LOS by Move:	D+	C	C	D	C-	C-	D	C	C	D+	C	C
HCM2kAvgQ:	6	4	5	2	3	3	3	6	6	2	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #9: East Middlefield Road and Whisman Road



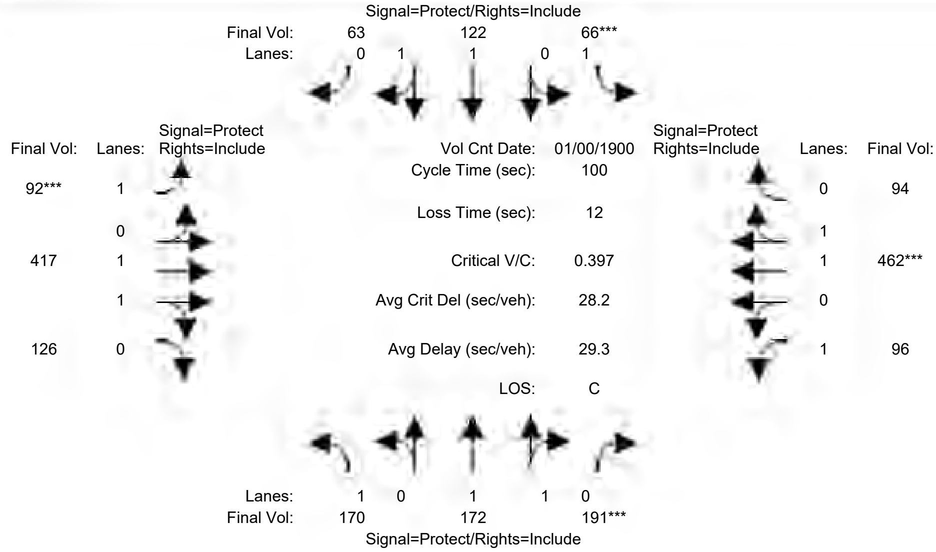
Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	79	67	63	51	286	74	77	380	480	337	503	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	67	63	51	286	74	77	380	480	337	503	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	67	63	51	286	74	77	380	480	337	503	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	67	63	51	286	74	77	380	480	337	503	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	67	63	51	286	74	77	380	480	337	503	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	67	63	51	286	74	77	380	480	337	503	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	1.00	1.00	1.00	1.58	0.42	1.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1906	1792	1750	2939	760	1750	1900	1750	1750	3440	260
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.04	0.03	0.10	0.10	0.04	0.20	0.27	0.19	0.15	0.15
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.12	0.12	0.12	0.13	0.13	0.21	0.38	0.38	0.27	0.44	0.44
Volume/Cap:	0.45	0.30	0.30	0.25	0.72	0.72	0.21	0.53	0.72	0.72	0.33	0.33
Delay/Veh:	44.3	40.8	40.8	40.8	46.7	46.7	33.0	24.4	28.8	38.9	18.7	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	40.8	40.8	40.8	46.7	46.7	33.0	24.4	28.8	38.9	18.7	18.7
LOS by Move:	D	D	D	D	D	D	C-	C	C	D+	B-	B-
HCM2kAvgQ:	3	2	2	2	7	7	2	9	15	10	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #9: East Middlefield Road and Whisman Road



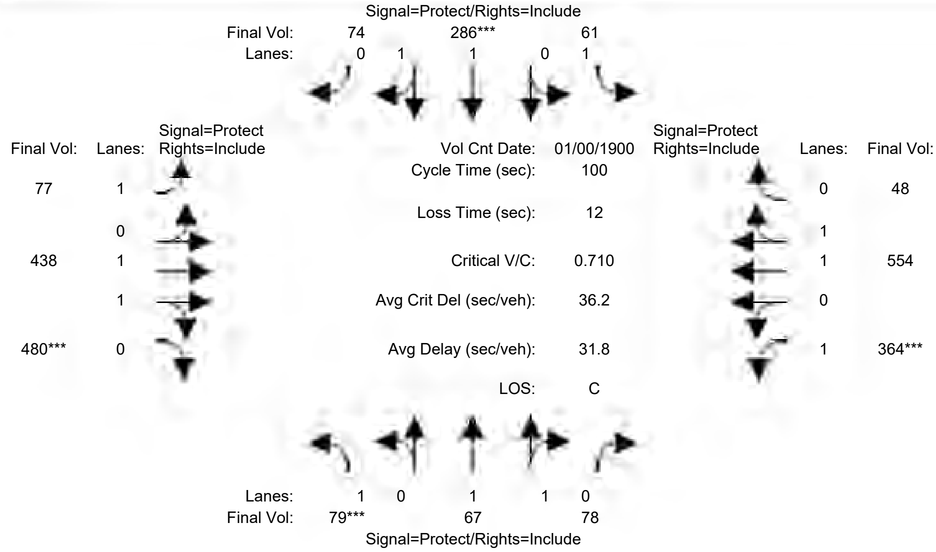
Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	170	172	188	61	122	63	92	377	126	65	413	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	172	188	61	122	63	92	377	126	65	413	91
Added Vol:	0	0	3	5	0	0	0	40	0	31	49	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	172	191	66	122	63	92	417	126	96	462	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	172	191	66	122	63	92	417	126	96	462	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	172	191	66	122	63	92	417	126	96	462	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	172	191	66	122	63	92	417	126	96	462	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.00	1.00	1.00	1.30	0.70	1.00	1.52	0.48	1.00	1.65	0.35
Final Sat.:	1750	1900	1750	1750	2439	1260	1750	2841	858	1750	3074	625
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.11	0.04	0.05	0.05	0.05	0.15	0.15	0.05	0.15	0.15
Crit Moves:			****	****			****				****	
Green/Cycle:	0.19	0.27	0.27	0.10	0.19	0.19	0.13	0.34	0.34	0.16	0.38	0.38
Volume/Cap:	0.52	0.33	0.40	0.38	0.27	0.27	0.40	0.43	0.43	0.33	0.40	0.40
Delay/Veh:	38.2	29.2	30.0	43.5	35.0	35.0	41.0	25.5	25.5	37.7	23.1	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.2	29.2	30.0	43.5	35.0	35.0	41.0	25.5	25.5	37.7	23.1	23.1
LOS by Move:	D+	C	C	D	D+	D+	D	C	C	D+	C	C
HCM2kAvgQ:	6	4	5	2	3	3	3	7	7	3	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #9: East Middlefield Road and Whisman Road



Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	79	67	63	51	286	74	77	380	480	337	503	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	67	63	51	286	74	77	380	480	337	503	38
Added Vol:	0	0	15	10	0	0	0	58	0	27	51	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	67	78	61	286	74	77	438	480	364	554	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	67	78	61	286	74	77	438	480	364	554	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	67	78	61	286	74	77	438	480	364	554	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	67	78	61	286	74	77	438	480	364	554	48
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	1.00	1.00	1.00	1.58	0.42	1.00	1.00	1.00	1.00	1.84	0.16
Final Sat.:	1750	1900	1750	1750	2939	760	1750	1900	1750	1750	3405	295
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.04	0.03	0.10	0.10	0.04	0.23	0.27	0.21	0.16	0.16
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.12	0.12	0.12	0.13	0.13	0.20	0.37	0.37	0.28	0.45	0.45
Volume/Cap:	0.45	0.31	0.39	0.30	0.74	0.74	0.23	0.62	0.74	0.74	0.36	0.36
Delay/Veh:	44.3	40.9	41.6	41.4	48.0	48.0	34.2	26.7	29.9	38.8	17.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	40.9	41.6	41.4	48.0	48.0	34.2	26.7	29.9	38.8	17.9	17.9
LOS by Move:	D	D	D	D	D	D	C-	C	C	D+	B	B
HCM2kAvgQ:	3	2	3	2	7	7	2	12	15	11	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include

Final Vol: 109 0 160***
Lanes: 1 0 0 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
256***	1		Cycle Time (sec):	70		0	470
	0		Loss Time (sec):	9		1	
385	2		Critical V/C:	0.547		1	564***
	0		Avg Crit Del (sec/veh):	17.3		0	
0	0		Avg Delay (sec/veh):	15.1		0	0
			LOS:	B			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	160	0	109	256	385	0	0	564	470
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	160	0	109	256	385	0	0	564	470
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	160	0	109	256	385	0	0	564	470
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	160	0	109	256	385	0	0	564	470
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	160	0	109	256	385	0	0	564	470
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	160	0	109	256	385	0	0	564	470
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.07	0.93
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2017	1681
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.06	0.15	0.10	0.00	0.00	0.28	0.28
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.14	0.00	0.14	0.25	0.73	0.00	0.00	0.48	0.48
Volume/Cap:	0.00	0.00	0.00	0.36	0.00	0.44	0.58	0.14	0.00	0.00	0.58	0.58
Delay/Veh:	0.0	0.0	0.0	27.6	0.0	28.6	25.1	2.9	0.0	0.0	13.7	13.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	27.6	0.0	28.6	25.1	2.9	0.0	0.0	13.7	13.7
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	3	5	1	0	0	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include

Final Vol: 381*** 0 419
Lanes: 1 0 0 0 2

Signal=Protect
Rights=Include

Final Vol:	Lanes:
108***	1
	0
458	2
	0
0	0

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	65
Loss Time (sec):	9
Critical V/C:	0.523
Avg Crit Del (sec/veh):	18.1
Avg Delay (sec/veh):	15.5
LOS:	B

Signal=Protect
Rights=Include

Lanes:	Final Vol:
0	123
1	
1	510***
0	
0	0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	419	0	381	108	458	0	0	510	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	419	0	381	108	458	0	0	510	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	419	0	381	108	458	0	0	510	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	419	0	381	108	458	0	0	510	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	419	0	381	108	458	0	0	510	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	419	0	381	108	458	0	0	510	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.60	0.40
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2981	719
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.22	0.06	0.12	0.00	0.00	0.17	0.17
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.42	0.00	0.42	0.12	0.45	0.00	0.00	0.33	0.33
Volume/Cap:	0.00	0.00	0.00	0.32	0.00	0.52	0.52	0.27	0.00	0.00	0.52	0.52
Delay/Veh:	0.0	0.0	0.0	12.9	0.0	14.8	29.4	11.5	0.0	0.0	18.2	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.9	0.0	14.8	29.4	11.5	0.0	0.0	18.2	18.2
LOS by Move:	A	A	A	B	A	B	C	B+	A	A	B-	B-
HCM2kAvgQ:	0	0	0	4	0	7	2	3	0	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include
Final Vol: 145 0 215***
Lanes: 1 0 0 0 2

Final Vol: Lanes: Signal=Protect Rights=Include
274*** 1
0
414 2
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.624
Avg Crit Del (sec/veh): 18.3
Avg Delay (sec/veh): 16.3
LOS: B

Signal=Protect Rights=Include Lanes: Final Vol:
0 569
1
1 610***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	160	0	109	256	385	0	0	564	470
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	160	0	109	256	385	0	0	564	470
Added Vol:	0	0	0	55	0	36	18	29	0	0	46	99
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	215	0	145	274	414	0	0	610	569
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	215	0	145	274	414	0	0	610	569
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	215	0	145	274	414	0	0	610	569
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	215	0	145	274	414	0	0	610	569
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.01	0.99
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	1913	1784
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.08	0.16	0.11	0.00	0.00	0.32	0.32
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.14	0.00	0.14	0.24	0.73	0.00	0.00	0.49	0.49
Volume/Cap:	0.00	0.00	0.00	0.48	0.00	0.58	0.65	0.15	0.00	0.00	0.65	0.65
Delay/Veh:	0.0	0.0	0.0	28.4	0.0	31.4	27.6	2.9	0.0	0.0	14.3	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	28.4	0.0	31.4	27.6	2.9	0.0	0.0	14.3	14.3
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	4	6	1	0	0	10	10

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include
Final Vol: 427*** 0 529
Lanes: 1 0 0 0 2

Final Vol: | Lanes: | Signal=Protect Rights=Include
151*** 1
0
497 2
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 65
Loss Time (sec): 9
Critical V/C: 0.625
Avg Crit Del (sec/veh): 20.2
Avg Delay (sec/veh): 17.0
LOS: B

Signal=Protect Rights=Include | Lanes: | Final Vol:
0 218
1
1 553***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	419	0	381	108	458	0	0	510	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	419	0	381	108	458	0	0	510	123
Added Vol:	0	0	0	104	0	38	36	46	0	0	51	89
PasserByVol:	0	0	0	6	0	8	7	-7	0	0	-8	6
Initial Fut:	0	0	0	529	0	427	151	497	0	0	553	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	529	0	427	151	497	0	0	553	218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	529	0	427	151	497	0	0	553	218
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	529	0	427	151	497	0	0	553	218
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.42	0.58
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2653	1046
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.24	0.09	0.13	0.00	0.00	0.21	0.21
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.14	0.47	0.00	0.00	0.33	0.33
Volume/Cap:	0.00	0.00	0.00	0.43	0.00	0.63	0.63	0.28	0.00	0.00	0.63	0.63
Delay/Veh:	0.0	0.0	0.0	14.8	0.0	17.8	31.5	10.5	0.0	0.0	19.3	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	14.8	0.0	17.8	31.5	10.5	0.0	0.0	19.3	19.3
LOS by Move:	A	A	A	B	A	B	C	B+	A	A	B-	B-
HCM2kAvgQ:	0	0	0	5	0	8	3	3	0	0	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #11: East Middlefield Road and Logue Avenue

Signal=Permit/Rights=Include
Final Vol: 125*** 5 15
Lanes: 1 0 0 1 0

Signal=Protect Rights=Include (Eastbound) — Final Vol: 85***, 429, 13; Lanes: 1, 0, 1, 1, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 85
Loss Time (sec): 9
Critical V/C: 0.449
Avg Crit Del (sec/veh): 12.8
Avg Delay (sec/veh): 14.0
LOS: B

Signal=Protect Rights=Include (Westbound) — Lanes: 0, 1, 1, 0, 1; Final Vol: 130, 911***, 48

Lanes: 0 0 1! 0 0
Final Vol: 1 0 9
Signal=Permit/Rights=Include

Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	1	0	9	15	5	125	85	429	13	48	911	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	9	15	5	125	85	429	13	48	911	130
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	9	15	5	125	85	429	13	48	911	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	0	9	15	5	125	85	429	13	48	911	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	9	15	5	125	85	429	13	48	911	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	9	15	5	125	85	429	13	48	911	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.10	0.00	0.90	0.75	0.25	1.00	1.00	1.94	0.06	1.00	1.74	0.26
Final Sat.:	175	0	1575	1350	450	1750	1750	3591	109	1750	3238	462
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.01	0.01	0.07	0.05	0.12	0.12	0.03	0.28	0.28
Crit Moves:						****	****				****	
Green/Cycle:	0.16	0.00	0.16	0.16	0.16	0.16	0.11	0.44	0.44	0.30	0.63	0.63
Volume/Cap:	0.04	0.00	0.04	0.07	0.07	0.45	0.45	0.27	0.27	0.09	0.45	0.45
Delay/Veh:	30.3	0.0	30.3	30.5	30.5	33.5	37.2	15.5	15.5	21.5	8.4	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	0.0	30.3	30.5	30.5	33.5	37.2	15.5	15.5	21.5	8.4	8.4
LOS by Move:	C	A	C	C	C	C-	D+	B	B	C+	A	A
HCM2kAvgQ:	0	0	0	0	0	4	2	4	4	1	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #11: East Middlefield Road and Logue Avenue

Signal=Permit/Rights=Include
Final Vol: 130 2*** 123
Lanes: 1 0 0 1 0

Signal=Protect
Rights=Include

Final Vol: Lanes:
49 1
0
893*** 1
1
3 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 105
Loss Time (sec): 9
Critical V/C: 0.356
Avg Crit Del (sec/veh): 12.6
Avg Delay (sec/veh): 16.9
LOS: B

Signal=Protect
Rights=Include

Lanes: Final Vol:
0 32
1
1 410
0
1 24***

Lanes: 0 0 1! 0 0
Final Vol: 16 1 38
Signal=Permit/Rights=Include

Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	16	1	38	123	2	130	49	893	3	24	410	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1	38	123	2	130	49	893	3	24	410	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	1	38	123	2	130	49	893	3	24	410	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1	38	123	2	130	49	893	3	24	410	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1	38	123	2	130	49	893	3	24	410	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1	38	123	2	130	49	893	3	24	410	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.29	0.02	0.69	0.98	0.02	1.00	1.00	1.99	0.01	1.00	1.85	0.15
Final Sat.:	509	32	1209	1771	29	1750	1750	3688	12	1750	3432	268
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.07	0.07	0.07	0.03	0.24	0.24	0.01	0.12	0.12
Crit Moves:					****			****		****		
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.26	0.66	0.66	0.07	0.47	0.47
Volume/Cap:	0.17	0.17	0.17	0.37	0.37	0.39	0.11	0.37	0.37	0.21	0.26	0.26
Delay/Veh:	35.9	35.9	35.9	37.8	37.8	38.1	29.7	8.2	8.2	47.2	17.1	17.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.9	35.9	35.9	37.8	37.8	38.1	29.7	8.2	8.2	47.2	17.1	17.1
LOS by Move:	D+	D+	D+	D+	D+	D+	C	A	A	D	B	B
HCM2kAvgQ:	2	2	2	4	4	4	1	7	7	1	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #11: East Middlefield Road and Logue Avenue

Signal=Permit/Rights=Include
Final Vol: 227*** 5 19
Lanes: 1 0 0 1 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
122***	1		Vol Cnt Date:	01/00/1900		0	146
			Cycle Time (sec):	85			
	0		Loss Time (sec):	9		1	
477	1		Critical V/C:	0.556		1	955***
	1		Avg Crit Del (sec/veh):	18.1		0	
13	0		Avg Delay (sec/veh):	18.2		1	48
			LOS:	B-			

Lanes: 0 0 1! 0 0
Final Vol: 1 0 9
Signal=Permit/Rights=Include

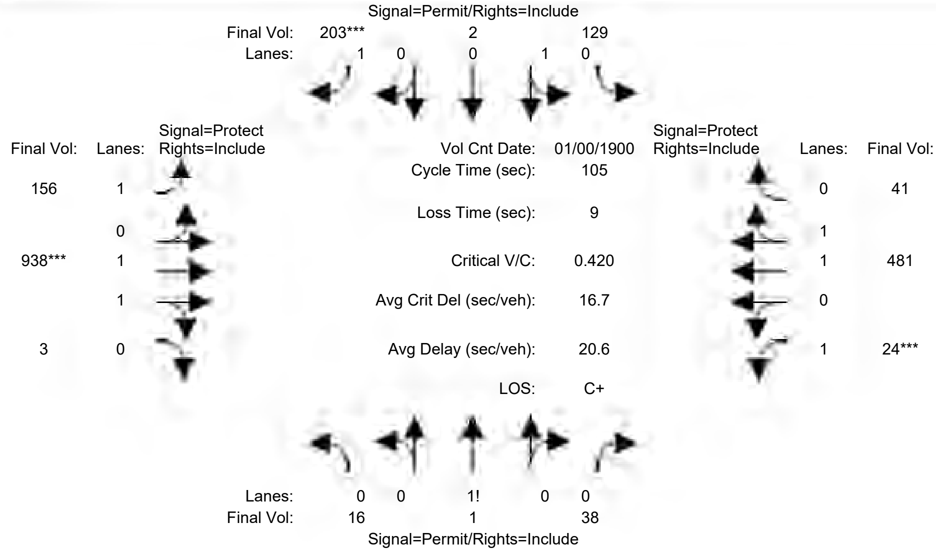
Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	1	0	9	15	5	125	85	429	13	48	911	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	9	15	5	125	85	429	13	48	911	130
Added Vol:	0	0	0	4	0	102	37	48	0	0	44	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	9	19	5	227	122	477	13	48	955	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	0	9	19	5	227	122	477	13	48	955	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	9	19	5	227	122	477	13	48	955	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	9	19	5	227	122	477	13	48	955	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.10	0.00	0.90	0.79	0.21	1.00	1.00	1.95	0.05	1.00	1.73	0.27
Final Sat.:	175	0	1575	1425	375	1750	1750	3602	98	1750	3209	491
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.01	0.01	0.13	0.07	0.13	0.13	0.03	0.30	0.30
Crit Moves:						****	****				****	
Green/Cycle:	0.23	0.00	0.23	0.23	0.23	0.23	0.13	0.41	0.41	0.25	0.54	0.54
Volume/Cap:	0.02	0.00	0.02	0.06	0.06	0.56	0.56	0.33	0.33	0.11	0.56	0.56
Delay/Veh:	25.1	0.0	25.1	25.4	25.4	30.4	38.1	17.3	17.3	24.5	13.4	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.1	0.0	25.1	25.4	25.4	30.4	38.1	17.3	17.3	24.5	13.4	13.4
LOS by Move:	C	A	C	C	C	C	D+	B	B	C	B	B
HCM2kAvgQ:	0	0	0	1	1	6	3	4	4	1	10	10

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #11: East Middlefield Road and Logue Avenue



Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	16	1	38	123	2	130	49	893	3	24	410	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1	38	123	2	130	49	893	3	24	410	32
Added Vol:	0	0	0	6	0	70	105	45	0	0	71	9
PasserByVol:	0	0	0	0	0	3	2	0	0	0	0	0
Initial Fut:	16	1	38	129	2	203	156	938	3	24	481	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1	38	129	2	203	156	938	3	24	481	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1	38	129	2	203	156	938	3	24	481	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1	38	129	2	203	156	938	3	24	481	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.29	0.02	0.69	0.98	0.02	1.00	1.00	1.99	0.01	1.00	1.84	0.16
Final Sat.:	509	32	1209	1773	27	1750	1750	3688	12	1750	3409	291
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.07	0.07	0.12	0.09	0.25	0.25	0.01	0.14	0.14
Crit Moves:						****		****		****		
Green/Cycle:	0.27	0.27	0.27	0.27	0.27	0.27	0.25	0.58	0.58	0.07	0.40	0.40
Volume/Cap:	0.12	0.12	0.12	0.27	0.27	0.44	0.35	0.44	0.44	0.21	0.35	0.35
Delay/Veh:	29.4	29.4	29.4	30.9	30.9	32.7	32.8	12.4	12.4	47.2	22.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	29.4	30.9	30.9	32.7	32.8	12.4	12.4	47.2	22.3	22.3
LOS by Move:	C	C	C	C	C	C-	C-	B	B	D	C+	C+
HCM2kAvgQ:	1	1	1	4	4	6	4	8	8	1	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #12: Ferguson Drive and East Middlefield Road

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Westbound approach (left side): Signal=Protect, Rights=Include

Final Vol:	Lanes:
0***	0
	0
436	1
	1
26	0

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	70
Loss Time (sec):	9
Critical V/C:	0.389
Avg Crit Del (sec/veh):	6.6
Avg Delay (sec/veh):	10.3
LOS:	B+

Right side: Signal=Protect, Rights=Include

Lanes:	Final Vol:
0	0
0	
2	1157***
0	
2	35

Lanes: 1 0 0 0 1
Final Vol: 61*** 0 140
Signal=Split/Rights=Include

Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	61	0	140	0	0	0	0	436	26	35	1157	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	0	140	0	0	0	0	436	26	35	1157	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	0	140	0	0	0	0	436	26	35	1157	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	0	140	0	0	0	0	436	26	35	1157	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	0	140	0	0	0	0	436	26	35	1157	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	0	140	0	0	0	0	436	26	35	1157	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.88	0.12	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3492	208	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.08	0.00	0.00	0.00	0.00	0.12	0.12	0.01	0.30	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.00	0.39	0.39	0.27	0.67	0.00
Volume/Cap:	0.17	0.00	0.39	0.00	0.00	0.00	0.00	0.32	0.32	0.04	0.46	0.00
Delay/Veh:	23.1	0.0	24.7	0.0	0.0	0.0	0.0	14.9	14.9	18.7	5.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.1	0.0	24.7	0.0	0.0	0.0	0.0	14.9	14.9	18.7	5.7	0.0
LOS by Move:	C	A	C	A	A	A	A	B	B	B-	A	A
HCM2kAvgQ:	1	0	3	0	0	0	0	3	3	0	6	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #12: Ferguson Drive and East Middlefield Road

Signal=Split/Rights=Include

Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	01/00/1900		0	0
			Cycle Time (sec):	70			
	0		Loss Time (sec):	9		0	
994***	1		Critical V/C:	0.397		2	425
	1		Avg Crit Del (sec/veh):	9.9		0	
86	0		Avg Delay (sec/veh):	8.8		2	138***
			LOS:	A			

Lanes: 1 0 0 0 1
Final Vol: 18*** 0 64
Signal=Split/Rights=Include

Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	18	0	64	0	0	0	0	994	86	138	425	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	0	64	0	0	0	0	994	86	138	425	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	0	64	0	0	0	0	994	86	138	425	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	18	0	64	0	0	0	0	994	86	138	425	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	0	64	0	0	0	0	994	86	138	425	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	0	64	0	0	0	0	994	86	138	425	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.84	0.16	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3405	295	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.29	0.29	0.04	0.11	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.63	0.63	0.10	0.73	0.00
Volume/Cap:	0.07	0.00	0.26	0.00	0.00	0.00	0.00	0.46	0.46	0.44	0.15	0.00
Delay/Veh:	26.1	0.0	27.2	0.0	0.0	0.0	0.0	7.0	7.0	30.6	2.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.1	0.0	27.2	0.0	0.0	0.0	0.0	7.0	7.0	30.6	2.9	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	0	0	2	0	0	0	0	6	6	2	1	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #12: Ferguson Drive and East Middlefield Road

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect Rights=Include (westbound side) — Final Vol: / Lanes:
0*** 0
0
479 1
1
35 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.414
Avg Crit Del (sec/veh): 6.6
Avg Delay (sec/veh): 10.4
LOS: B+

Signal=Protect Rights=Include — Lanes: / Final Vol:
0 0
0
2 1199***
0
2 39

Lanes: 1 0 0 0 1
Final Vol: 79*** 0 141
Signal=Split/Rights=Include

Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	61	0	140	0	0	0	0	436	26	35	1157	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	0	140	0	0	0	0	436	26	35	1157	0
Added Vol:	18	0	1	0	0	0	0	43	9	4	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	0	141	0	0	0	0	479	35	39	1199	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	0	141	0	0	0	0	479	35	39	1199	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	0	141	0	0	0	0	479	35	39	1199	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	0	141	0	0	0	0	479	35	39	1199	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.86	0.14	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3448	252	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.08	0.00	0.00	0.00	0.00	0.14	0.14	0.01	0.32	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.40	0.40	0.28	0.68	0.00
Volume/Cap:	0.23	0.00	0.41	0.00	0.00	0.00	0.00	0.35	0.35	0.04	0.47	0.00
Delay/Veh:	24.1	0.0	25.5	0.0	0.0	0.0	0.0	14.9	14.9	18.5	5.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.1	0.0	25.5	0.0	0.0	0.0	0.0	14.9	14.9	18.5	5.5	0.0
LOS by Move:	C	A	C	A	A	A	A	B	B	B-	A	A
HCM2kAvgQ:	2	0	3	0	0	0	0	4	4	0	6	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #12: Ferguson Drive and East Middlefield Road

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect Rights=Include (westbound approach) — Final Vol: 0, 1035***, 96; Lanes: 0, 0, 1, 1, 0

Signal=Protect Rights=Include (eastbound approach) — Lanes: 0, 0, 2, 0, 2; Final Vol: 0, 489, 150***

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.427
Avg Crit Del (sec/veh): 10.3
Avg Delay (sec/veh): 9.0
LOS: A

Lanes: 1 0 0 0 1
Final Vol: 33*** 0 66
Signal=Split/Rights=Include

Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	18	0	64	0	0	0	0	994	86	138	425	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	0	64	0	0	0	0	994	86	138	425	0
Added Vol:	15	0	2	0	0	0	0	41	10	12	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	66	0	0	0	0	1035	96	150	489	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	0	66	0	0	0	0	1035	96	150	489	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	0	66	0	0	0	0	1035	96	150	489	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	0	66	0	0	0	0	1035	96	150	489	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.83	0.17	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3386	314	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.31	0.31	0.05	0.13	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.63	0.63	0.10	0.73	0.00
Volume/Cap:	0.13	0.00	0.26	0.00	0.00	0.00	0.00	0.49	0.49	0.48	0.18	0.00
Delay/Veh:	26.4	0.0	27.3	0.0	0.0	0.0	0.0	7.1	7.1	30.9	3.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	0.0	27.3	0.0	0.0	0.0	0.0	7.1	7.1	30.9	3.0	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	1	0	2	0	0	0	0	7	7	2	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp

Signal=Split/Rights=Include
Final Vol: 301*** 152 109
Lanes: 0 1 1 0 1

Signal=Protect Rights=Include (West approach) — Final Vol: / Lanes:
0*** 0
0
511 3
0
60 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 90
Loss Time (sec): 9
Critical V/C: 0.452
Avg Crit Del (sec/veh): 16.2
Avg Delay (sec/veh): 18.9
LOS: B-

Signal=Protect Rights=Include (East approach) — Lanes: / Final Vol:
0 0
0
2 893***
0
2 124

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

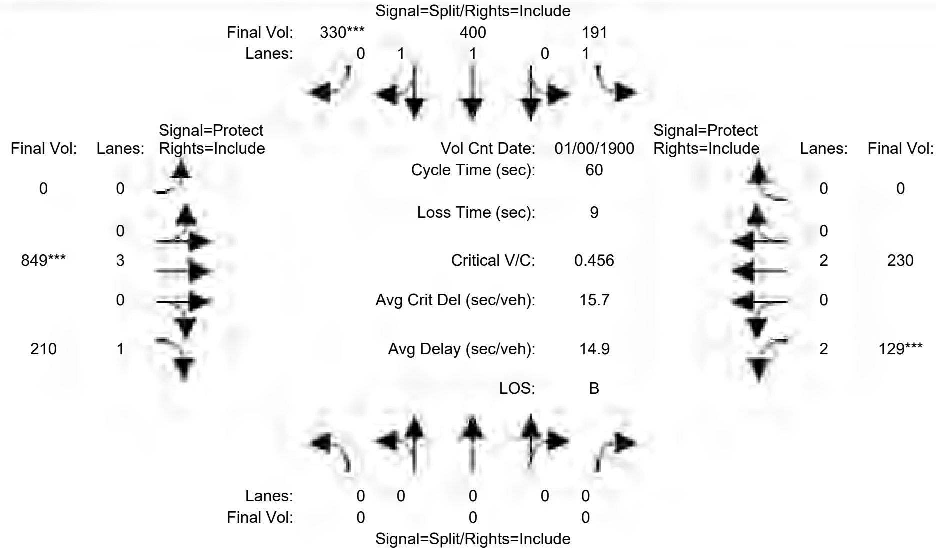
Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	109	152	301	0	511	60	124	893	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	109	152	301	0	511	60	124	893	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	109	152	301	0	511	60	124	893	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	109	152	301	0	511	60	124	893	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	109	152	301	0	511	60	124	893	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	109	152	301	0	511	60	124	893	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	1750	1900	1750	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.08	0.17	0.00	0.09	0.03	0.04	0.24	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.38	0.38	0.38	0.00	0.31	0.31	0.21	0.52	0.00
Volume/Cap:	0.00	0.00	0.00	0.16	0.21	0.45	0.00	0.29	0.11	0.18	0.45	0.00
Delay/Veh:	0.0	0.0	0.0	18.5	18.8	21.2	0.0	23.9	22.6	29.1	13.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	18.5	18.8	21.2	0.0	23.9	22.6	29.1	13.7	0.0
LOS by Move:	A	A	A	B-	B-	C+	A	C	C+	C	B	A
HCM2kAvgQ:	0	0	0	2	3	7	0	3	1	2	8	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp



Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	191	400	330	0	849	210	129	230	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	191	400	330	0	849	210	129	230	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	191	400	330	0	849	210	129	230	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	191	400	330	0	849	210	129	230	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	191	400	330	0	849	210	129	230	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	191	400	330	0	849	210	129	230	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	1.07	0.93	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	1750	2026	1672	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.20	0.20	0.00	0.15	0.12	0.04	0.06	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.42	0.42	0.42	0.00	0.32	0.32	0.12	0.43	0.00
Volume/Cap:	0.00	0.00	0.00	0.26	0.47	0.47	0.00	0.47	0.38	0.35	0.14	0.00
Delay/Veh:	0.0	0.0	0.0	11.6	12.9	12.9	0.0	16.7	16.4	25.0	10.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.6	12.9	12.9	0.0	16.7	16.4	25.0	10.3	0.0
LOS by Move:	A	A	A	B+	B	B	A	B	B	C	B+	A
HCM2kAvgQ:	0	0	0	2	5	5	0	4	3	1	1	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp

Signal=Split/Rights=Include
Final Vol: 320*** 185 110
Lanes: 0 1 1 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0***	0		Vol Cnt Date:	01/00/1900		0	0
	0		Cycle Time (sec):	90		0	
543	3		Loss Time (sec):	9		2	921***
	0		Critical V/C:	0.472		0	
72	1		Avg Crit Del (sec/veh):	16.7		2	124
			Avg Delay (sec/veh):	19.3			
			LOS:	B-			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

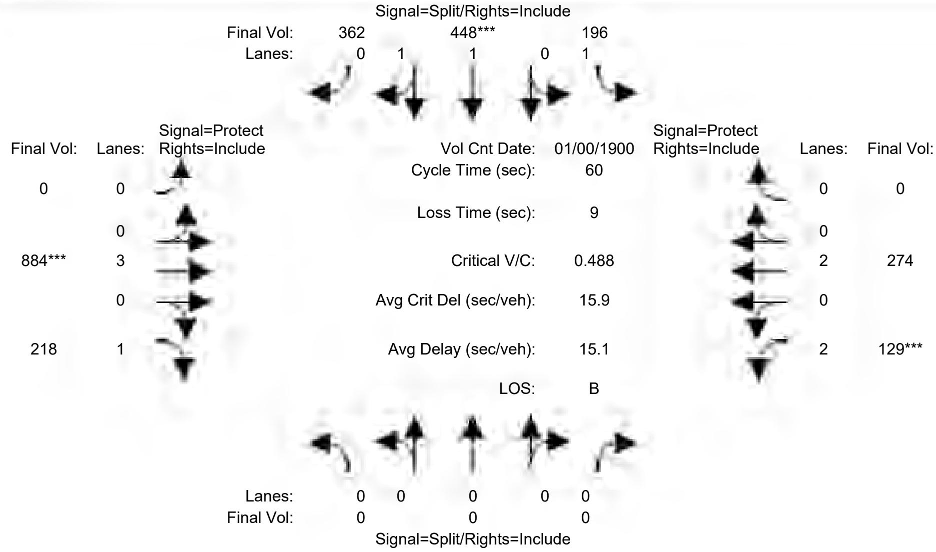
Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	109	152	301	0	511	60	124	893	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	109	152	301	0	511	60	124	893	0
Added Vol:	0	0	0	1	33	19	0	32	12	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	110	185	320	0	543	72	124	921	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	110	185	320	0	543	72	124	921	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	110	185	320	0	543	72	124	921	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	110	185	320	0	543	72	124	921	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	1750	1900	1750	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.10	0.18	0.00	0.10	0.04	0.04	0.24	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.39	0.39	0.39	0.00	0.30	0.30	0.21	0.51	0.00
Volume/Cap:	0.00	0.00	0.00	0.16	0.25	0.47	0.00	0.32	0.14	0.19	0.47	0.00
Delay/Veh:	0.0	0.0	0.0	18.2	18.8	21.0	0.0	24.4	23.0	29.3	14.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	18.2	18.8	21.0	0.0	24.4	23.0	29.3	14.3	0.0
LOS by Move:	A	A	A	B-	B-	C+	A	C	C+	C	B	A
HCM2kAvgQ:	0	0	0	2	3	7	0	4	1	2	8	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp



Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Base Vol:	0	0	0	191	400	330	0	849	210	129	230	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	191	400	330	0	849	210	129	230	0
Added Vol:	0	0	0	5	48	32	0	35	8	0	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	196	448	362	0	884	218	129	274	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	196	448	362	0	884	218	129	274	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	196	448	362	0	884	218	129	274	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	196	448	362	0	884	218	129	274	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	1.08	0.92	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	1750	2045	1653	0	5700	1750	3150	3800	0

Capacity Analysis Module:

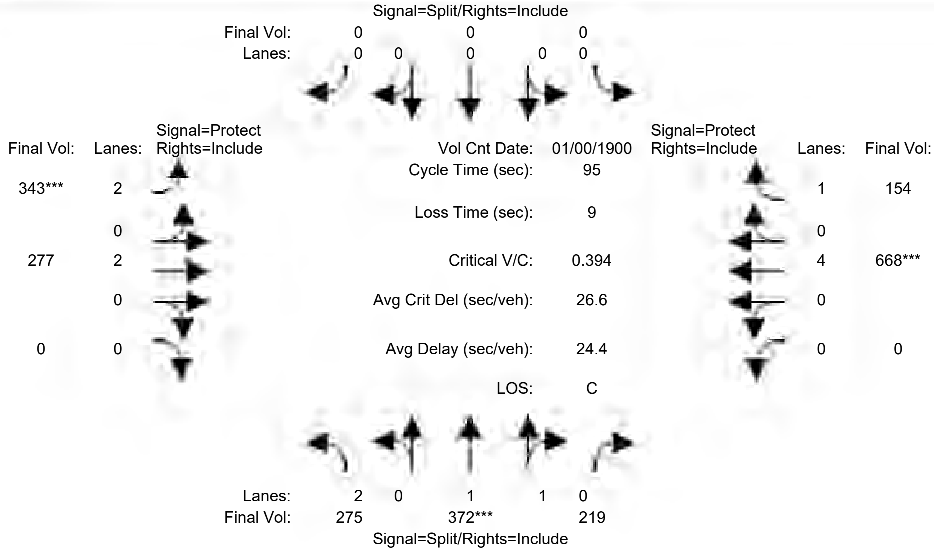
Vol/Sat:	0.00	0.00	0.00	0.11	0.22	0.22	0.00	0.16	0.12	0.04	0.07	0.00
Crit Moves:					****			****		****		
Green/Cycle:	0.00	0.00	0.00	0.43	0.43	0.43	0.00	0.30	0.30	0.12	0.42	0.00
Volume/Cap:	0.00	0.00	0.00	0.26	0.51	0.51	0.00	0.51	0.41	0.35	0.17	0.00
Delay/Veh:	0.0	0.0	0.0	11.2	12.8	12.8	0.0	17.5	17.1	25.0	10.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.2	12.8	12.8	0.0	17.5	17.1	25.0	10.9	0.0
LOS by Move:	A	A	A	B+	B	B	A	B	B	C	B+	A
HCM2kAvgQ:	0	0	0	2	5	5	0	4	3	1	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp



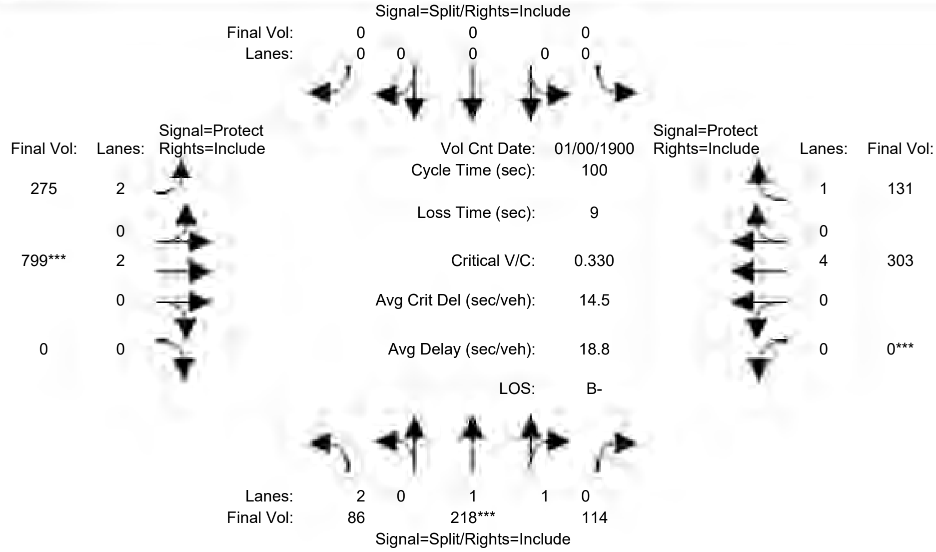
Street Name:	237 Eastbound Off-Ramp and Connec						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	275	372	219	0	0	0	343	277	0	0	668	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	372	219	0	0	0	343	277	0	0	668	154
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	372	219	0	0	0	343	277	0	0	668	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	372	219	0	0	0	343	277	0	0	668	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	372	219	0	0	0	343	277	0	0	668	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	372	219	0	0	0	343	277	0	0	668	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.24	0.76	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2328	1370	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.16	0.00	0.00	0.00	0.11	0.07	0.00	0.00	0.09	0.09
Crit Moves:		****					****				****	
Green/Cycle:	0.41	0.41	0.41	0.00	0.00	0.00	0.28	0.50	0.00	0.00	0.22	0.22
Volume/Cap:	0.22	0.39	0.39	0.00	0.00	0.00	0.39	0.15	0.00	0.00	0.39	0.39
Delay/Veh:	18.5	20.1	20.1	0.0	0.0	0.0	28.2	12.9	0.0	0.0	31.6	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.5	20.1	20.1	0.0	0.0	0.0	28.2	12.9	0.0	0.0	31.6	32.1
LOS by Move:	B-	C+	C+	A	A	A	C	B	A	A	C	C-
HCM2kAvgQ:	3	6	6	0	0	0	5	2	0	0	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp



Street Name:	237 Eastbound Off-Ramp and Connec						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	86	218	114	0	0	0	275	799	0	0	303	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	218	114	0	0	0	275	799	0	0	303	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	218	114	0	0	0	275	799	0	0	303	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	218	114	0	0	0	275	799	0	0	303	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	218	114	0	0	0	275	799	0	0	303	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	218	114	0	0	0	275	799	0	0	303	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.29	0.71	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2429	1270	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.00	0.00	0.00	0.09	0.21	0.00	0.00	0.04	0.07
Crit Moves:		****						****		****		
Green/Cycle:	0.27	0.27	0.27	0.00	0.00	0.00	0.30	0.64	0.00	0.00	0.34	0.34
Volume/Cap:	0.10	0.33	0.33	0.00	0.00	0.00	0.29	0.33	0.00	0.00	0.12	0.22
Delay/Veh:	27.3	29.3	29.3	0.0	0.0	0.0	27.2	8.4	0.0	0.0	22.7	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.3	29.3	29.3	0.0	0.0	0.0	27.2	8.4	0.0	0.0	22.7	23.7
LOS by Move:	C	C	C	A	A	A	C	A	A	A	C+	C
HCM2kAvgQ:	1	4	4	0	0	0	4	5	0	0	2	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	95			
354***	2					1	156
			Loss Time (sec):	9			
	0					0	
299	2		Critical V/C:	0.420		4	681***
	0		Avg Crit Del (sec/veh):	26.6		0	
0	0		Avg Delay (sec/veh):	24.4		0	0
			LOS:	C			

Lanes: 2 0 1 1 0
Final Vol: 290 441 219***
Signal=Split/Rights=Include

Street Name: 237 Eastbound Off-Ramp and Connec — East Middlefield Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	275	372	219	0	0	0	343	277	0	0	668	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	372	219	0	0	0	343	277	0	0	668	154
Added Vol:	15	69	0	0	0	0	11	22	0	0	13	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	290	441	219	0	0	0	354	299	0	0	681	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	290	441	219	0	0	0	354	299	0	0	681	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	441	219	0	0	0	354	299	0	0	681	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	441	219	0	0	0	354	299	0	0	681	156
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.32	0.68	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2471	1227	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.18	0.00	0.00	0.00	0.11	0.08	0.00	0.00	0.09	0.09
Crit Moves:			****				****				****	
Green/Cycle:	0.42	0.42	0.42	0.00	0.00	0.00	0.27	0.48	0.00	0.00	0.21	0.21
Volume/Cap:	0.22	0.42	0.42	0.00	0.00	0.00	0.42	0.16	0.00	0.00	0.42	0.42
Delay/Veh:	17.4	19.3	19.3	0.0	0.0	0.0	29.1	13.9	0.0	0.0	32.5	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.4	19.3	19.3	0.0	0.0	0.0	29.1	13.9	0.0	0.0	32.5	33.0
LOS by Move:	B	B-	B-	A	A	A	C	B	A	A	C-	C-
HCM2kAvgQ:	3	7	7	0	0	0	5	2	0	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp

Signal=Split/Rights=Include

Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect
Rights=Include

Final Vol:	Lanes:			Signal=Protect Rights=Include	Lanes:	Final Vol:
290	2	Vol Cnt Date:	01/00/1900		1	136
		Cycle Time (sec):	100			
	0	Loss Time (sec):	9		0	
824***	2	Critical V/C:	0.349		4	324
	0	Avg Crit Del (sec/veh):	15.2		0	
0	0	Avg Delay (sec/veh):	19.5		0	0***
		LOS:	B-			

Lanes: 2 0 1 1 0
Final Vol: 109 260*** 114
Signal=Split/Rights=Include

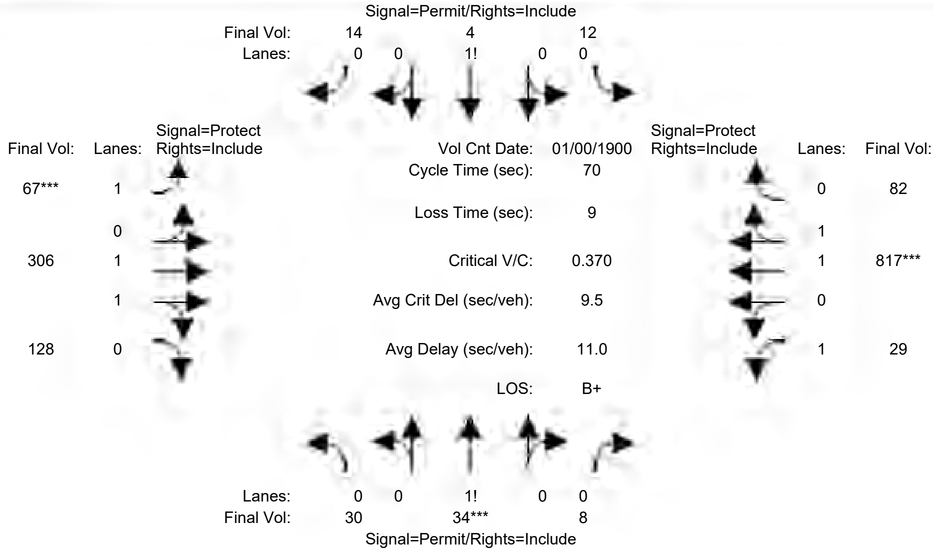
Street Name:	237 Eastbound Off-Ramp and Connec						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	86	218	114	0	0	0	275	799	0	0	303	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	218	114	0	0	0	275	799	0	0	303	131
Added Vol:	23	42	0	0	0	0	15	25	0	0	21	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	260	114	0	0	0	290	824	0	0	324	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	260	114	0	0	0	290	824	0	0	324	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	260	114	0	0	0	290	824	0	0	324	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	260	114	0	0	0	290	824	0	0	324	136
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.37	0.63	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2571	1127	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.10	0.00	0.00	0.00	0.09	0.22	0.00	0.00	0.04	0.08
Crit Moves:		****						****		****		
Green/Cycle:	0.29	0.29	0.29	0.00	0.00	0.00	0.30	0.62	0.00	0.00	0.32	0.32
Volume/Cap:	0.12	0.35	0.35	0.00	0.00	0.00	0.31	0.35	0.00	0.00	0.13	0.24
Delay/Veh:	26.2	28.3	28.3	0.0	0.0	0.0	27.4	9.3	0.0	0.0	24.0	25.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	28.3	28.3	0.0	0.0	0.0	27.4	9.3	0.0	0.0	24.0	25.1
LOS by Move:	C	C	C	A	A	A	C	A	A	A	C	C
HCM2kAvgQ:	1	5	5	0	0	0	4	6	0	0	2	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #15: East Middlefield Road and Bernardo Avenue



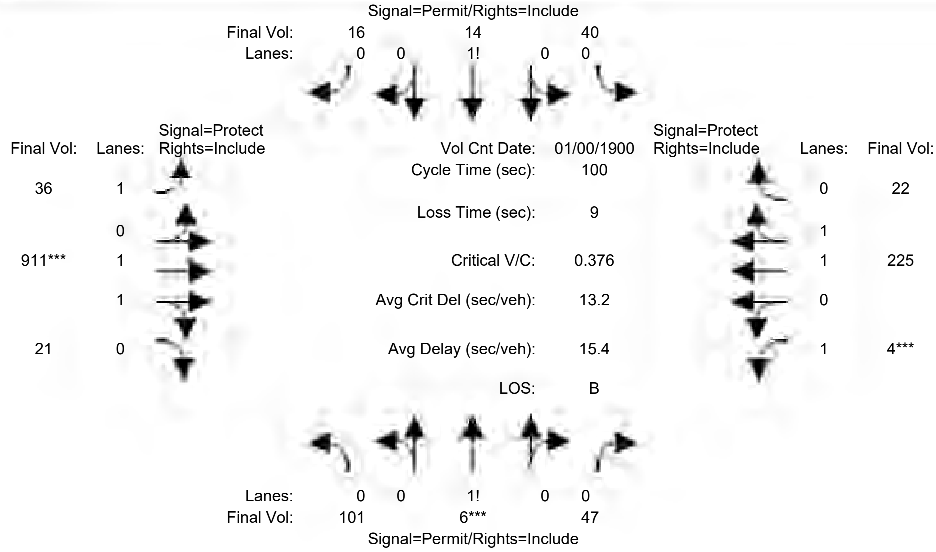
Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	30	34	8	12	4	14	67	306	128	29	817	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	34	8	12	4	14	67	306	128	29	817	82
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	34	8	12	4	14	67	306	128	29	817	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	30	34	8	12	4	14	67	306	128	29	817	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	34	8	12	4	14	67	306	128	29	817	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	34	8	12	4	14	67	306	128	29	817	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.42	0.47	0.11	0.40	0.13	0.47	1.00	1.39	0.61	1.00	1.81	0.19
Final Sat.:	729	826	194	700	233	817	1750	2608	1091	1750	3362	337
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.02	0.02	0.02	0.04	0.12	0.12	0.02	0.24	0.24
Crit Moves:		****					****				****	
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.43	0.43	0.30	0.63	0.63
Volume/Cap:	0.29	0.29	0.29	0.12	0.12	0.12	0.38	0.27	0.27	0.06	0.39	0.39
Delay/Veh:	27.5	27.5	27.5	26.4	26.4	26.4	30.9	13.0	13.0	17.5	6.5	6.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.5	27.5	27.5	26.4	26.4	26.4	30.9	13.0	13.0	17.5	6.5	6.5
LOS by Move:	C	C	C	C	C	C	C	B	B	B	A	A
HCM2kAvgQ:	2	2	2	1	1	1	2	3	3	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #15: East Middlefield Road and Bernardo Avenue



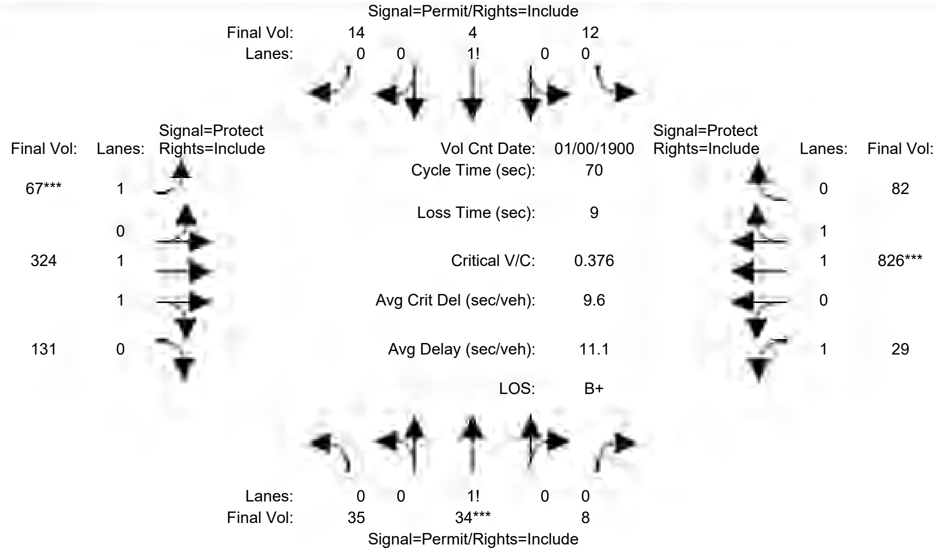
Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	101	6	47	40	14	16	36	911	21	4	225	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	6	47	40	14	16	36	911	21	4	225	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	6	47	40	14	16	36	911	21	4	225	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	6	47	40	14	16	36	911	21	4	225	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	6	47	40	14	16	36	911	21	4	225	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	6	47	40	14	16	36	911	21	4	225	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.66	0.04	0.30	0.57	0.20	0.23	1.00	1.95	0.05	1.00	1.82	0.18
Final Sat.:	1148	68	534	1000	350	400	1750	3617	83	1750	3370	330
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.04	0.04	0.04	0.02	0.25	0.25	0.00	0.07	0.07
Crit Moves:		****						****		****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.29	0.62	0.62	0.07	0.41	0.41
Volume/Cap:	0.40	0.40	0.40	0.18	0.18	0.18	0.07	0.40	0.40	0.03	0.16	0.16
Delay/Veh:	34.3	34.3	34.3	32.1	32.1	32.1	26.1	9.6	9.6	43.5	18.9	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.3	34.3	34.3	32.1	32.1	32.1	26.1	9.6	9.6	43.5	18.9	18.9
LOS by Move:	C-	C-	C-	C-	C-	C-	C	A	A	D	B-	B-
HCM2kAvgQ:	5	5	5	2	2	2	1	7	7	0	2	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #15: East Middlefield Road and Bernardo Avenue



Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	30	34	8	12	4	14	67	306	128	29	817	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	34	8	12	4	14	67	306	128	29	817	82
Added Vol:	5	0	0	0	0	0	0	18	3	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	34	8	12	4	14	67	324	131	29	826	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	34	8	12	4	14	67	324	131	29	826	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	34	8	12	4	14	67	324	131	29	826	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	34	8	12	4	14	67	324	131	29	826	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.46	0.44	0.10	0.40	0.13	0.47	1.00	1.41	0.59	1.00	1.81	0.19
Final Sat.:	795	773	182	700	233	817	1750	2634	1065	1750	3366	334
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.02	0.02	0.02	0.04	0.12	0.12	0.02	0.25	0.25
Crit Moves:		****					****				****	
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.43	0.43	0.30	0.63	0.63
Volume/Cap:	0.31	0.31	0.31	0.12	0.12	0.12	0.38	0.29	0.29	0.06	0.39	0.39
Delay/Veh:	27.6	27.6	27.6	26.4	26.4	26.4	30.9	13.1	13.1	17.5	6.5	6.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.6	27.6	27.6	26.4	26.4	26.4	30.9	13.1	13.1	17.5	6.5	6.5
LOS by Move:	C	C	C	C	C	C	C	B	B	B	A	A
HCM2kAvgQ:	2	2	2	1	1	1	2	3	3	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #15: East Middlefield Road and Bernardo Avenue

Signal=Permit/Rights=Include
Final Vol: 16 14 40
Lanes: 0 0 1! 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
36	1		Cycle Time (sec):	100		0	22
	0		Loss Time (sec):	9		1	
923***	1		Critical V/C:	0.389		1	238
	1		Avg Crit Del (sec/veh):	13.7		0	
31	0		Avg Delay (sec/veh):	15.8		1	4***
			LOS:	B			

Lanes: 0 0 1! 0 0
Final Vol: 111 6*** 47
Signal=Permit/Rights=Include

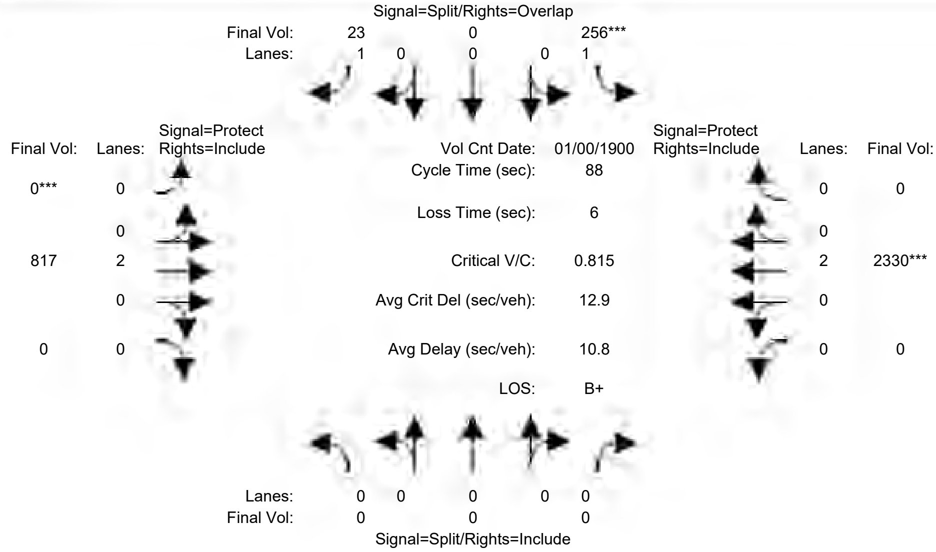
Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	101	6	47	40	14	16	36	911	21	4	225	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	6	47	40	14	16	36	911	21	4	225	22
Added Vol:	10	0	0	0	0	0	0	12	10	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	6	47	40	14	16	36	923	31	4	238	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	6	47	40	14	16	36	923	31	4	238	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	6	47	40	14	16	36	923	31	4	238	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	6	47	40	14	16	36	923	31	4	238	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.68	0.04	0.28	0.57	0.20	0.23	1.00	1.93	0.07	1.00	1.83	0.17
Final Sat.:	1184	64	502	1000	350	400	1750	3580	120	1750	3387	313
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.04	0.04	0.04	0.02	0.26	0.26	0.00	0.07	0.07
Crit Moves:		****						****		****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.28	0.62	0.62	0.07	0.40	0.40
Volume/Cap:	0.42	0.42	0.42	0.18	0.18	0.18	0.07	0.42	0.42	0.03	0.17	0.17
Delay/Veh:	34.0	34.0	34.0	31.6	31.6	31.6	26.3	10.1	10.1	43.5	19.2	19.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	34.0	34.0	31.6	31.6	31.6	26.3	10.1	10.1	43.5	19.2	19.2
LOS by Move:	C-	C-	C-	C	C	C	C	B+	B+	D	B-	B-
HCM2kAvgQ:	5	5	5	2	2	2	1	8	8	0	3	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp



Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	0	14	0	63	0	0	63	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	256	0	23	0	817	0	0	2330	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	256	0	23	0	817	0	0	2330	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	256	0	23	0	817	0	0	2330	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	256	0	23	0	817	0	0	2330	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	256	0	23	0	817	0	0	2330	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	256	0	23	0	817	0	0	2330	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.22	0.00	0.00	0.61	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.75	0.00	0.00	0.75	0.00
Volume/Cap:	0.00	0.00	0.00	0.82	0.00	0.07	0.00	0.29	0.00	0.00	0.82	0.00
Delay/Veh:	0.0	0.0	0.0	49.8	0.0	30.1	0.0	3.5	0.0	0.0	8.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	49.8	0.0	30.1	0.0	3.5	0.0	0.0	8.9	0.0
LOS by Move:	A	A	A	D	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	10	0	1	0	3	0	0	20	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp

Signal=Split/Rights=Overlap
Final Vol: 28 0 387***
Lanes: 1 0 0 0 1

Signal=Protect Rights=Include (West approach) — Final Vol: 0, 1726***, 0; Lanes: 0, 0, 2, 0, 0

Signal=Protect Rights=Include (East approach) — Lanes: 0, 0, 2, 0, 0; Final Vol: 0, 1109, 0***

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	90
Loss Time (sec):	6
Critical V/C:	0.724
Avg Crit Del (sec/veh):	16.2
Avg Delay (sec/veh):	13.8
LOS:	B

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	25	0	25	0	54	0	0	54	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	387	0	28	0	1726	0	0	1109	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	387	0	28	0	1726	0	0	1109	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	387	0	28	0	1726	0	0	1109	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	387	0	28	0	1726	0	0	1109	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	387	0	28	0	1726	0	0	1109	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	387	0	28	0	1726	0	0	1109	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.02	0.00	0.45	0.00	0.00	0.29	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.31	0.00	0.31	0.00	0.63	0.00	0.00	0.63	0.00
Volume/Cap:	0.00	0.00	0.00	0.72	0.00	0.05	0.00	0.72	0.00	0.00	0.46	0.00
Delay/Veh:	0.0	0.0	0.0	32.7	0.0	22.1	0.0	12.5	0.0	0.0	9.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.7	0.0	22.1	0.0	12.5	0.0	0.0	9.0	0.0
LOS by Move:	A	A	A	C-	A	C+	A	B	A	A	A	A
HCM2kAvgQ:	0	0	0	12	0	1	0	15	0	0	8	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp

Signal=Split/Rights=Overlap
Final Vol: 23 0 256***
Lanes: 1 0 0 0 1

Final Vol: Lanes: Signal=Protect Rights=Include
0*** 0
0
831 2
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 88
Loss Time (sec): 6
Critical V/C: 0.820
Avg Crit Del (sec/veh): 13.1
Avg Delay (sec/veh): 10.9
LOS: B+

Signal=Protect Rights=Include Lanes: Final Vol:
0 0
0
2 2346***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

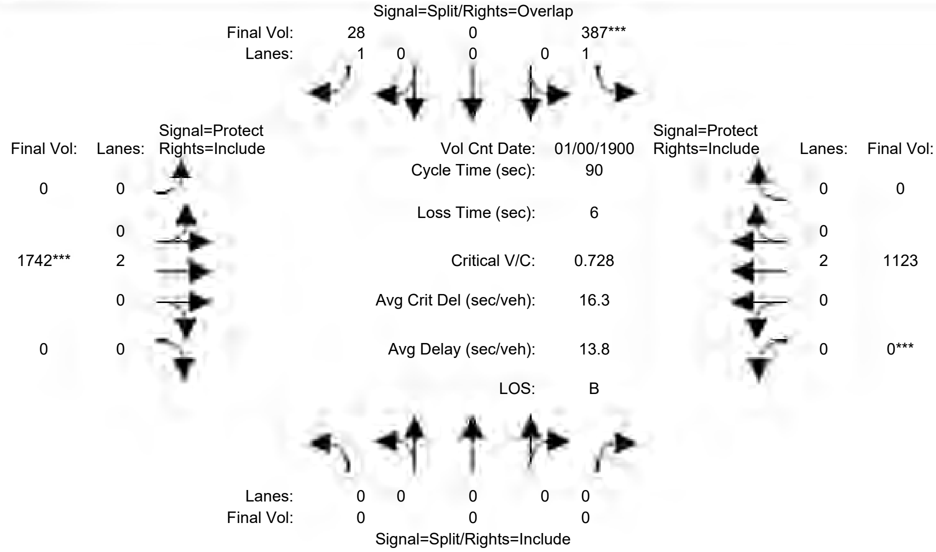
Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	0	14	0	63	0	0	63	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	256	0	23	0	817	0	0	2330	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	256	0	23	0	817	0	0	2330	0
Added Vol:	0	0	0	0	0	0	0	14	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	256	0	23	0	831	0	0	2346	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	256	0	23	0	831	0	0	2346	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	256	0	23	0	831	0	0	2346	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	256	0	23	0	831	0	0	2346	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.22	0.00	0.00	0.62	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.75	0.00	0.00	0.75	0.00
Volume/Cap:	0.00	0.00	0.00	0.82	0.00	0.07	0.00	0.29	0.00	0.00	0.82	0.00
Delay/Veh:	0.0	0.0	0.0	50.4	0.0	30.2	0.0	3.5	0.0	0.0	9.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	50.4	0.0	30.2	0.0	3.5	0.0	0.0	9.0	0.0
LOS by Move:	A	A	A	D	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	10	0	1	0	3	0	0	21	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp



Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	25	0	25	0	54	0	0	54	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	387	0	28	0	1726	0	0	1109	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	387	0	28	0	1726	0	0	1109	0
Added Vol:	0	0	0	0	0	0	0	16	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	387	0	28	0	1742	0	0	1123	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	387	0	28	0	1742	0	0	1123	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	387	0	28	0	1742	0	0	1123	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	387	0	28	0	1742	0	0	1123	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.02	0.00	0.46	0.00	0.00	0.30	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.63	0.00	0.00	0.63	0.00
Volume/Cap:	0.00	0.00	0.00	0.73	0.00	0.05	0.00	0.73	0.00	0.00	0.47	0.00
Delay/Veh:	0.0	0.0	0.0	33.1	0.0	22.2	0.0	12.6	0.0	0.0	8.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.1	0.0	22.2	0.0	12.6	0.0	0.0	8.9	0.0
LOS by Move:	A	A	A	C-	A	C+	A	B	A	A	A	A
HCM2kAvgQ:	0	0	0	12	0	1	0	15	0	0	8	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #17: Central Expy and Whisman Station Drive

Signal=Split/Rights=Overlap
Final Vol: 596*** 0 68
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include (Eastbound)
Final Vol: 246*** Lanes: 1
Lanes: 0
Final Vol: 879 Lanes: 3
Lanes: 0
Final Vol: 0 Lanes: 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 89
Loss Time (sec): 9
Critical V/C: 0.820
Avg Crit Del (sec/veh): 32.0
Avg Delay (sec/veh): 25.4
LOS: C

Signal=Protect Rights=Include (Westbound)
Lanes: 1 Final Vol: 149
Lanes: 0
Lanes: 3 Final Vol: 2258***
Lanes: 0
Lanes: 0 Final Vol: 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	12	58	0	0	50	50
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	68	0	596	246	879	0	0	2258	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	68	0	596	246	879	0	0	2258	149
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	68	0	596	246	879	0	0	2258	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	68	0	596	246	879	0	0	2258	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	68	0	596	246	879	0	0	2258	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	68	0	596	246	879	0	0	2258	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.34	0.14	0.15	0.00	0.00	0.40	0.09
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.34	0.14	0.70	0.00	0.00	0.56	0.56
Volume/Cap:	0.00	0.00	0.00	0.11	0.00	1.01	1.01	0.22	0.00	0.00	0.71	0.15
Delay/Veh:	0.0	0.0	0.0	29.3	0.0	69.2	98.7	4.7	0.0	0.0	14.9	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.3	0.0	69.2	98.7	4.7	0.0	0.0	14.9	9.4
LOS by Move:	A	A	A	C	A	E	F	A	A	A	B	A
HCM2kAvgQ:	0	0	0	1	0	25	10	3	0	0	14	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #17: Central Expy and Whisman Station Drive

Signal=Split/Rights=Overlap
Final Vol: 270 0 134***
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include (Eastbound)
Final Vol: 360*** / 1743 / 0
Lanes: 1 / 0 / 3 / 0 / 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 98
Loss Time (sec): 9
Critical V/C: 0.502
Avg Crit Del (sec/veh): 19.8
Avg Delay (sec/veh): 10.7
LOS: B+

Signal=Protect Rights=Include (Westbound)
Lanes: 1 / 0 / 3 / 0 / 0
Final Vol: 167 / 1184*** / 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	11	0	11	16	64	0	0	54	54
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	134	0	270	360	1743	0	0	1184	167
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	134	0	270	360	1743	0	0	1184	167
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	134	0	270	360	1743	0	0	1184	167
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	134	0	270	360	1743	0	0	1184	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	134	0	270	360	1743	0	0	1184	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	134	0	270	360	1743	0	0	1184	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.15	0.21	0.31	0.00	0.00	0.21	0.10
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.36	0.24	0.80	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.43	0.84	0.38	0.00	0.00	0.38	0.17
Delay/Veh:	0.0	0.0	0.0	41.0	0.0	24.4	48.9	0.1	0.0	0.0	8.5	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	41.0	0.0	24.4	48.9	0.1	0.0	0.0	8.5	7.5
LOS by Move:	A	A	A	D	A	C	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	3	0	7	11	0	0	0	4	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #17: Central Expy and Whisman Station Drive

Signal=Split/Rights=Overlap
Final Vol: 601*** 0 68
Lanes: 1 0 0 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
244***	1		Vol Cnt Date:	01/00/1900		1	149
	0		Cycle Time (sec):	89		0	
895	3		Loss Time (sec):	9		3	2269***
	0		Critical V/C:	0.825		0	
0	0		Avg Crit Del (sec/veh):	32.6		0	0
			Avg Delay (sec/veh):	25.9			
			LOS:	C			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

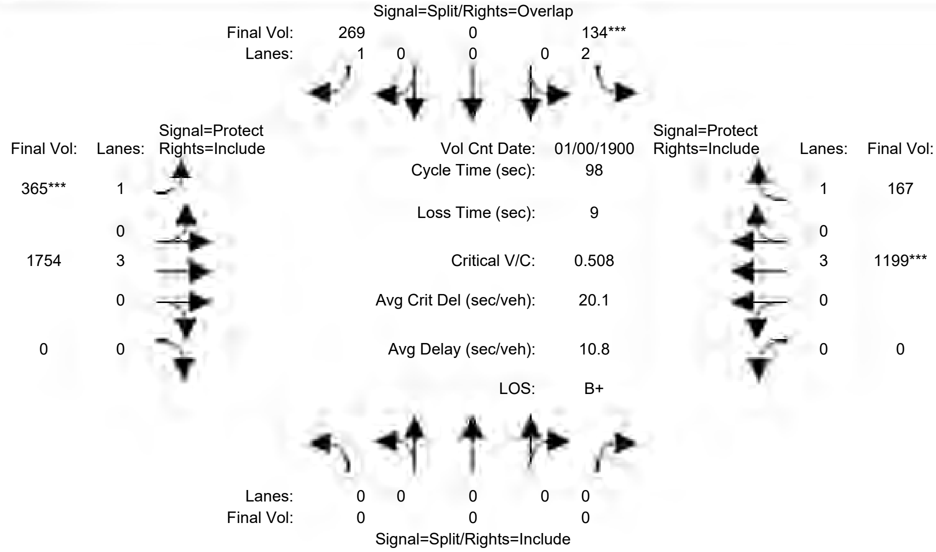
Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	12	58	0	0	50	50
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	68	0	596	246	879	0	0	2258	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	68	0	596	246	879	0	0	2258	149
Added Vol:	0	0	0	0	0	5	-2	16	0	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	68	0	601	244	895	0	0	2269	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	68	0	601	244	895	0	0	2269	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	68	0	601	244	895	0	0	2269	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	68	0	601	244	895	0	0	2269	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.34	0.14	0.16	0.00	0.00	0.40	0.09
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.34	0.14	0.70	0.00	0.00	0.56	0.56
Volume/Cap:	0.00	0.00	0.00	0.11	0.00	1.02	1.02	0.22	0.00	0.00	0.71	0.15
Delay/Veh:	0.0	0.0	0.0	29.2	0.0	71.4	101.5	4.8	0.0	0.0	14.9	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.2	0.0	71.4	101.5	4.8	0.0	0.0	14.9	9.4
LOS by Move:	A	A	A	C	A	E	F	A	A	A	B	A
HCM2kAvgQ:	0	0	0	1	0	26	10	3	0	0	14	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #17: Central Expy and Whisman Station Drive



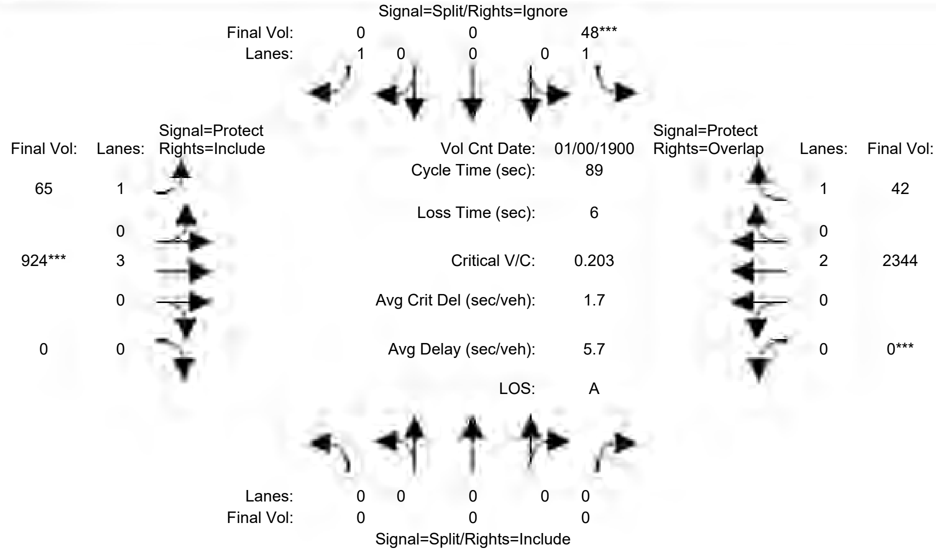
Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	11	0	11	16	64	0	0	54	54
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	134	0	270	360	1743	0	0	1184	167
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	134	0	270	360	1743	0	0	1184	167
Added Vol:	0	0	0	0	0	-1	5	11	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	134	0	269	365	1754	0	0	1199	167
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	134	0	269	365	1754	0	0	1199	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	134	0	269	365	1754	0	0	1199	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	134	0	269	365	1754	0	0	1199	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.15	0.21	0.31	0.00	0.00	0.21	0.10
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.36	0.24	0.80	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.43	0.85	0.39	0.00	0.00	0.38	0.17
Delay/Veh:	0.0	0.0	0.0	41.0	0.0	24.4	50.3	0.1	0.0	0.0	8.6	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	41.0	0.0	24.4	50.3	0.1	0.0	0.0	8.6	7.5
LOS by Move:	A	A	A	D	A	C	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	3	0	7	11	0	0	0	4	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #18: Central Expy and Ferguson Drive



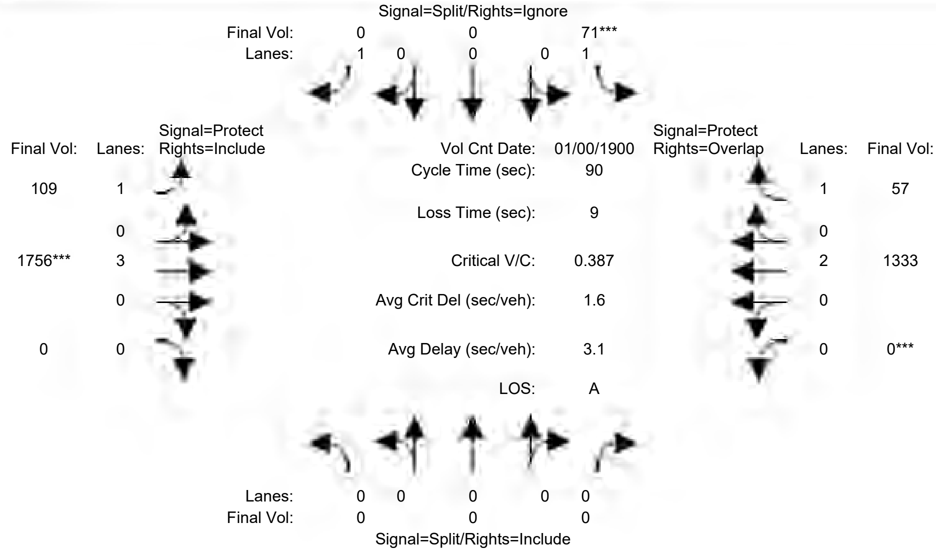
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	8	0	8	8	70	0	0	57	57
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	48	0	142	65	924	0	0	2344	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	48	0	142	65	924	0	0	2344	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	48	0	142	65	924	0	0	2344	42
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	48	0	0	65	924	0	0	2344	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	48	0	0	65	924	0	0	2344	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	48	0	0	65	924	0	0	2344	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.00	0.04	0.16	0.00	0.00	0.62	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.13	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.83
Volume/Cap:	0.00	0.00	0.00	0.20	0.00	0.00	0.38	0.20	0.00	0.00	0.88	0.03
Delay/Veh:	0.0	0.0	0.0	34.7	0.0	0.0	39.0	0.0	0.0	0.0	6.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	34.7	0.0	0.0	39.0	0.0	0.0	0.0	6.5	0.0
LOS by Move:	A	A	A	C-	A	A	D+	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	0	2	0	0	0	14	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #18: Central Expy and Ferguson Drive



Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	0	7	8	72	0	0	59	59
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Base Vol:	0	0	0	71	0	97	109	1756	0	0	1333	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	71	0	97	109	1756	0	0	1333	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	71	0	97	109	1756	0	0	1333	57
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	71	0	0	109	1756	0	0	1333	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	71	0	0	109	1756	0	0	1333	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	71	0	0	109	1756	0	0	1333	57

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750

Capacity Analysis Module:

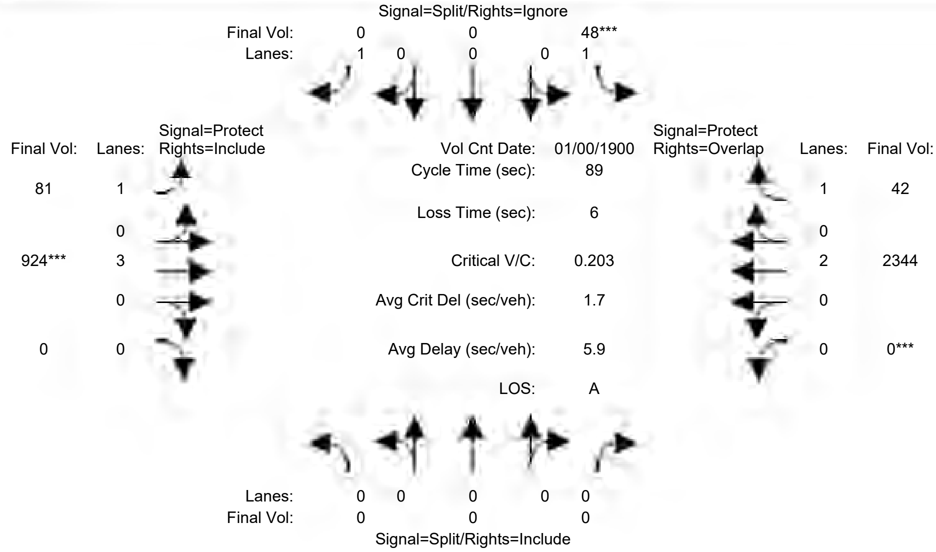
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.06	0.31	0.00	0.00	0.35	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.80
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.00	0.65	0.39	0.00	0.00	0.50	0.04
Delay/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	48.1	0.1	0.0	0.0	1.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	48.1	0.1	0.0	0.0	1.6	0.0
LOS by Move:	A	A	A	D	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	0	3	1	0	0	3	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #18: Central Expy and Ferguson Drive



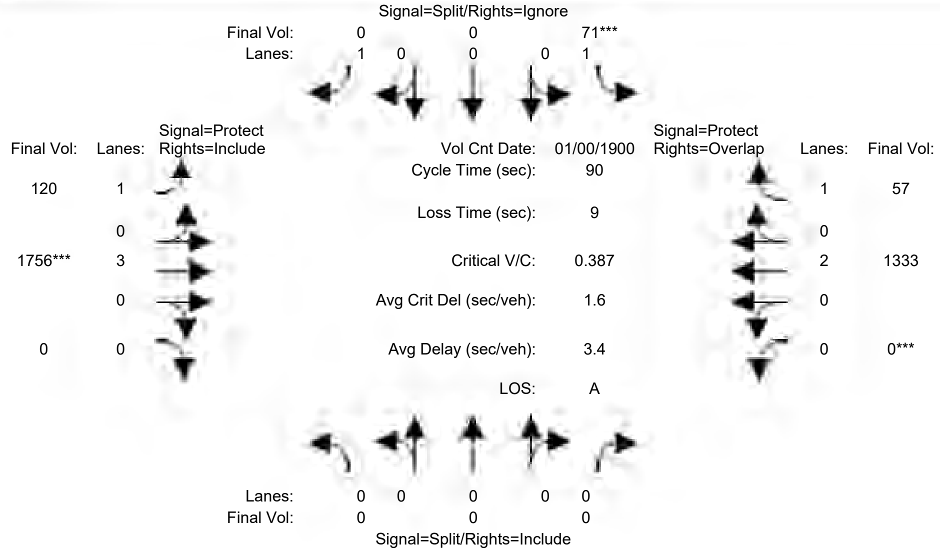
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	8	0	8	8	70	0	0	57	57
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	48	0	142	65	924	0	0	2344	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	48	0	142	65	924	0	0	2344	42
Added Vol:	0	0	0	0	0	11	16	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	48	0	153	81	924	0	0	2344	42
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	48	0	0	81	924	0	0	2344	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	48	0	0	81	924	0	0	2344	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	48	0	0	81	924	0	0	2344	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.00	0.05	0.16	0.00	0.00	0.62	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.13	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.83
Volume/Cap:	0.00	0.00	0.00	0.20	0.00	0.00	0.47	0.20	0.00	0.00	0.88	0.03
Delay/Veh:	0.0	0.0	0.0	34.7	0.0	0.0	40.0	0.0	0.0	0.0	6.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	34.7	0.0	0.0	40.0	0.0	0.0	0.0	6.5	0.0
LOS by Move:	A	A	A	C-	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	0	2	0	0	0	14	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #18: Central Expy and Ferguson Drive



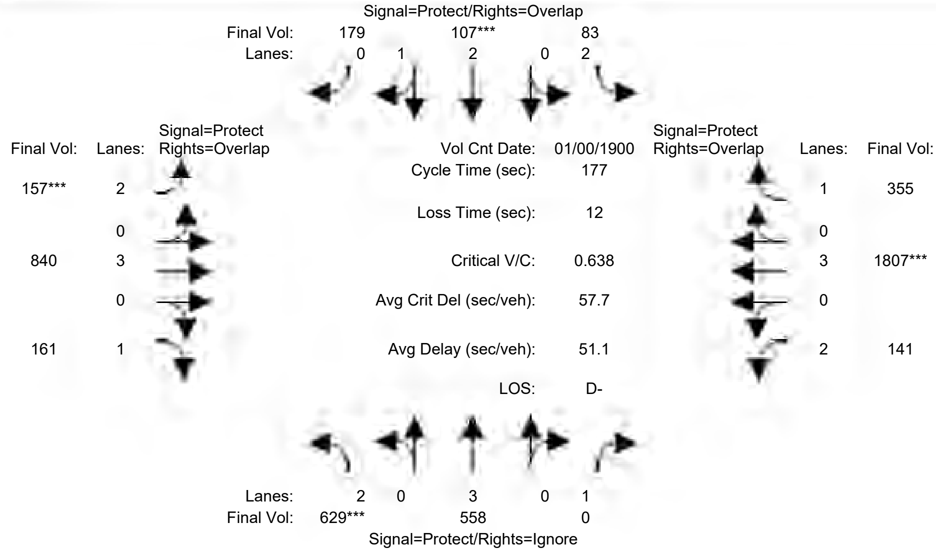
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	0	7	8	72	0	0	59	59
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	71	0	97	109	1756	0	0	1333	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	71	0	97	109	1756	0	0	1333	57
Added Vol:	0	0	0	0	0	15	11	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	71	0	112	120	1756	0	0	1333	57
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	71	0	0	120	1756	0	0	1333	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	71	0	0	120	1756	0	0	1333	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	71	0	0	120	1756	0	0	1333	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.07	0.31	0.00	0.00	0.35	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.80
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.00	0.72	0.39	0.00	0.00	0.50	0.04
Delay/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	53.5	0.1	0.0	0.0	1.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	53.5	0.1	0.0	0.0	1.6	0.0
LOS by Move:	A	A	A	D	A	A	D-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	0	4	1	0	0	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #20: Central Expy and Mary Avenue



Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	36	58	58	9	31	31	14	68	68	18	72	72
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	629	558	502	83	107	179	157	840	161	141	1807	355
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	629	558	502	83	107	179	157	840	161	141	1807	355
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	629	558	502	83	107	179	157	840	161	141	1807	355
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	629	558	0	83	107	179	157	840	161	141	1807	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	629	558	0	83	107	179	157	840	161	141	1807	355
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	629	558	0	83	107	179	157	840	161	141	1807	355
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.10	0.00	0.03	0.03	0.10	0.05	0.15	0.09	0.04	0.32	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.38	0.00	0.06	0.18	0.25	0.08	0.39	0.65	0.10	0.42	0.47
Volume/Cap:	0.76	0.26	0.00	0.45	0.16	0.40	0.63	0.38	0.14	0.43	0.76	0.43
Delay/Veh:	64.4	38.0	0.0	82.3	62.0	55.2	84.1	43.5	17.8	75.4	52.4	37.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.4	38.0	0.0	82.3	62.0	55.2	84.1	43.5	17.8	75.4	52.4	37.4
LOS by Move:	E	D+	A	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	19	7	0	3	2	9	6	12	5	5	30	16

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #20: Central Expy and Mary Avenue

Signal=Protect/Rights=Overlap (South Bound)
Final Vol: 115 185*** 185
Lanes: 0 1 2 0 2

West Bound: Signal=Protect, Rights=Overlap
Final Vol: 91, Lanes: 2
Lanes: 0
Final Vol: 1798***, Lanes: 3
Lanes: 0
Final Vol: 491, Lanes: 1

East Bound: Signal=Protect, Rights=Overlap
Lanes: 1, Final Vol: 76
Lanes: 0
Lanes: 3, Final Vol: 1166
Lanes: 0
Lanes: 2, Final Vol: 570***

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 180
Loss Time (sec): 12
Critical V/C: 0.684
Avg Crit Del (sec/veh): 75.4
Avg Delay (sec/veh): 62.1
LOS: E

Lanes: 2 0 3 0 1
Final Vol: 293*** 131 0
Signal=Protect/Rights=Ignore

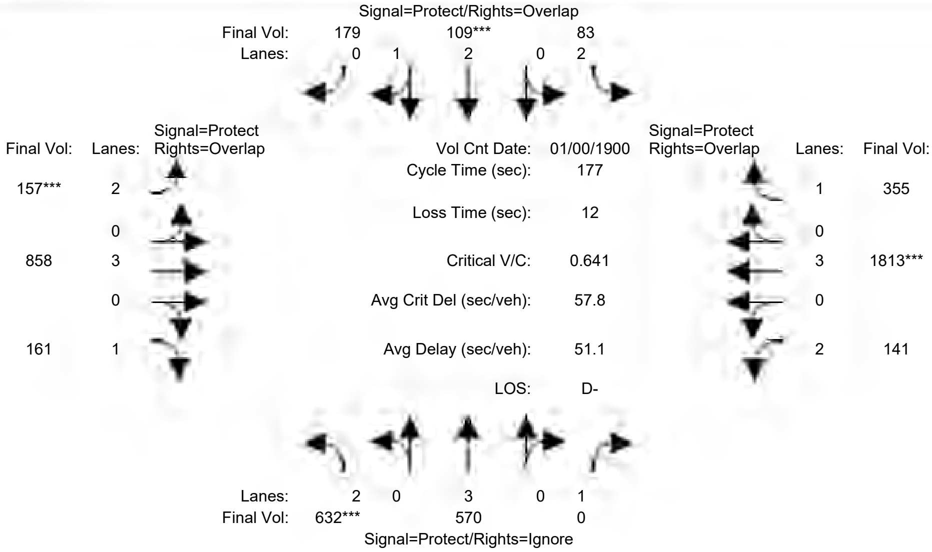
Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	47	47	17	45	45	11	47	47	45	81	81
Y+R:	6.2	5.9	5.9	6.1	6.0	6.0	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	293	131	635	185	185	115	91	1798	491	570	1166	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	293	131	635	185	185	115	91	1798	491	570	1166	76
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	293	131	635	185	185	115	91	1798	491	570	1166	76
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	293	131	0	185	185	115	91	1798	491	570	1166	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	293	131	0	185	185	115	91	1798	491	570	1166	76
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	293	131	0	185	185	115	91	1798	491	570	1166	76
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.02	0.00	0.06	0.05	0.07	0.03	0.32	0.28	0.18	0.20	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.26	0.00	0.09	0.25	0.32	0.07	0.33	0.43	0.25	0.51	0.60
Volume/Cap:	0.88	0.09	0.00	0.62	0.19	0.21	0.42	0.96	0.65	0.72	0.40	0.07
Delay/Veh:	102.2	50.3	0.0	82.4	53.3	44.7	81.6	77.3	48.8	67.2	34.3	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	102.2	50.3	0.0	82.4	53.3	44.7	81.6	77.3	48.8	67.2	34.3	20.8
LOS by Move:	F	D	A	F	D-	D	F	E-	D	E	C-	C+
HCM2kAvgQ:	11	2	0	7	4	5	3	37	25	19	16	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #20: Central Expy and Mary Avenue



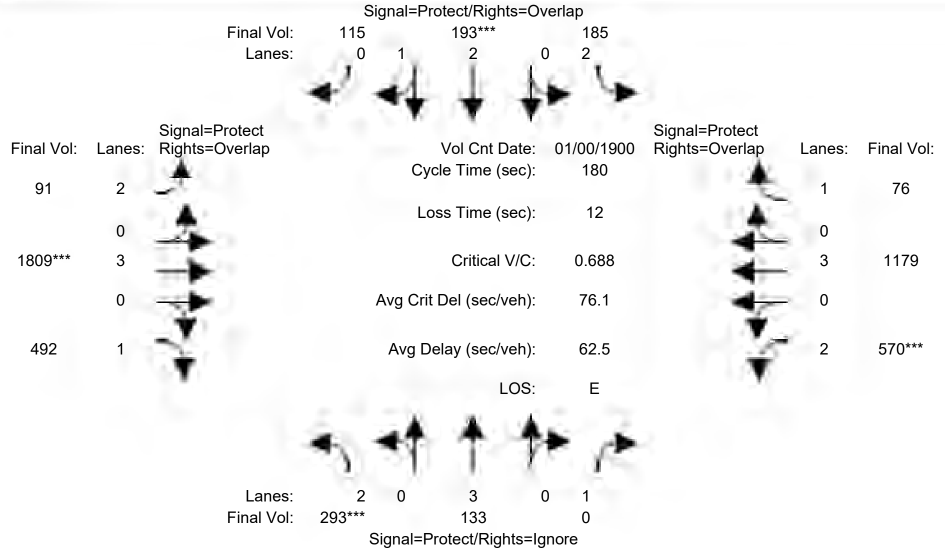
Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	36	58	58	9	31	31	14	68	68	18	72	72
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	629	558	502	83	107	179	157	840	161	141	1807	355
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	629	558	502	83	107	179	157	840	161	141	1807	355
Added Vol:	3	12	0	0	2	0	0	18	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	632	570	502	83	109	179	157	858	161	141	1813	355
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	632	570	0	83	109	179	157	858	161	141	1813	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	632	570	0	83	109	179	157	858	161	141	1813	355
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	632	570	0	83	109	179	157	858	161	141	1813	355
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.20	0.10	0.00	0.03	0.03	0.10	0.05	0.15	0.09	0.04	0.32	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.38	0.00	0.06	0.18	0.25	0.08	0.39	0.65	0.10	0.42	0.47
Volume/Cap:	0.77	0.26	0.00	0.45	0.16	0.40	0.63	0.38	0.14	0.43	0.77	0.43
Delay/Veh:	64.6	38.0	0.0	82.3	62.0	55.2	84.1	43.7	17.8	75.4	52.5	37.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.6	38.0	0.0	82.3	62.0	55.2	84.1	43.7	17.8	75.4	52.5	37.5
LOS by Move:	E	D+	A	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	19	7	0	3	2	9	6	12	5	5	30	16

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #20: Central Expy and Mary Avenue



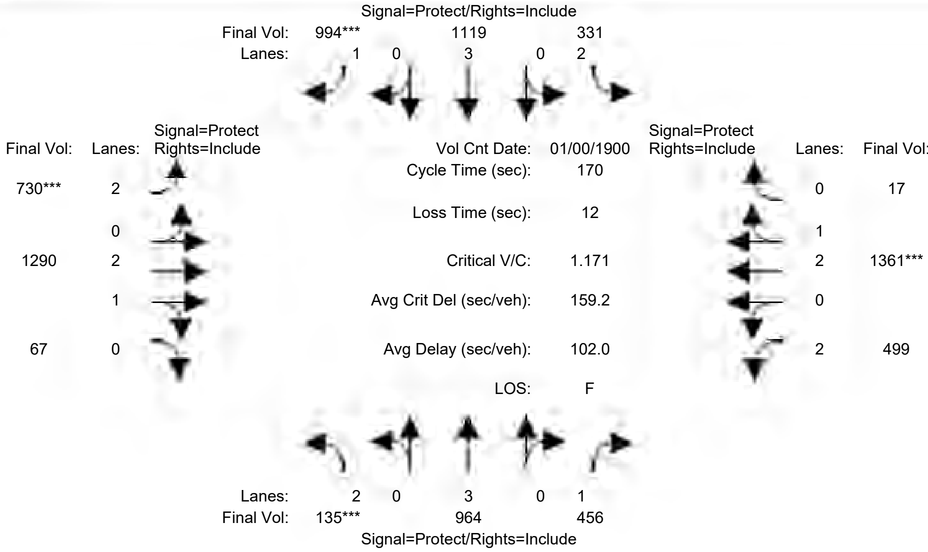
Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	47	47	17	45	45	11	47	47	45	81	81
Y+R:	6.2	5.9	5.9	6.1	6.0	6.0	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	293	131	635	185	185	115	91	1798	491	570	1166	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	293	131	635	185	185	115	91	1798	491	570	1166	76
Added Vol:	0	2	0	0	8	0	0	11	1	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	293	133	635	185	193	115	91	1809	492	570	1179	76
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	293	133	0	185	193	115	91	1809	492	570	1179	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	293	133	0	185	193	115	91	1809	492	570	1179	76
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	293	133	0	185	193	115	91	1809	492	570	1179	76
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.02	0.00	0.06	0.05	0.07	0.03	0.32	0.28	0.18	0.21	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.26	0.00	0.09	0.25	0.32	0.07	0.33	0.43	0.25	0.51	0.60
Volume/Cap:	0.88	0.09	0.00	0.62	0.20	0.21	0.42	0.97	0.65	0.72	0.41	0.07
Delay/Veh:	102.2	50.3	0.0	82.4	53.4	44.7	81.6	78.5	48.9	67.2	34.4	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	102.2	50.3	0.0	82.4	53.4	44.7	81.6	78.5	48.9	67.2	34.4	20.8
LOS by Move:	F	D	A	F	D-	D	F	E-	D	E	C-	C+
HCM2kAvgQ:	10	2	0	7	4	5	3	37	25	19	16	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #21: SR 237-Grant Rd and El Camino Real



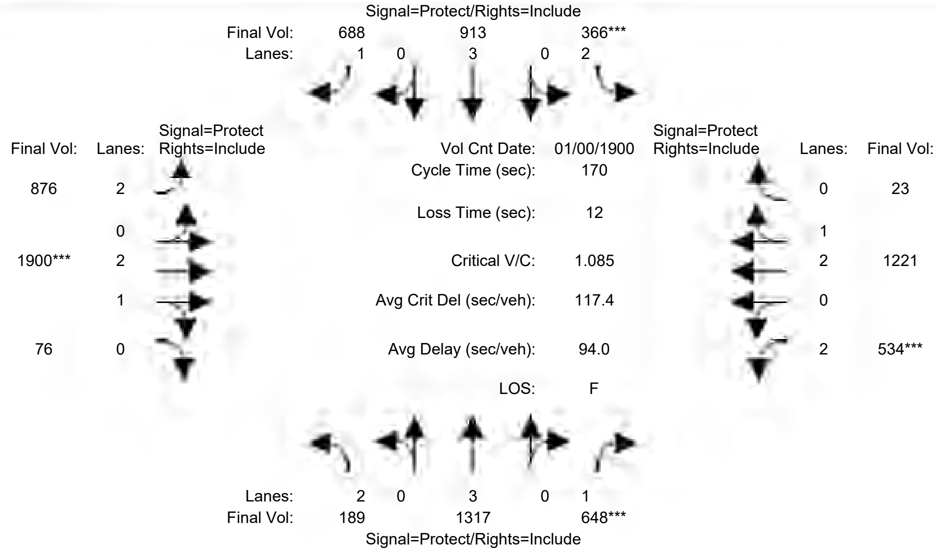
Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	964	456	331	1119	994	730	1290	67	499	1361	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	964	456	331	1119	994	730	1290	67	499	1361	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.85	0.15	2.00	2.96	0.04
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5323	276	3150	5531	69
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.26	0.11	0.20	0.57	0.23	0.24	0.24	0.16	0.25	0.25
Crit Moves:	****					****	****				****	
Green/Cycle:	0.06	0.38	0.38	0.15	0.47	0.47	0.19	0.24	0.24	0.16	0.20	0.20
Volume/Cap:	0.73	0.45	0.69	0.69	0.42	1.20	1.20	1.01	1.01	1.01	1.20	1.20
Delay/Veh:	92.3	39.6	47.4	72.3	29.5	146.9	174.3	90.9	90.9	114.0	167	166.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.3	39.6	47.4	72.3	29.5	146.9	174.3	90.9	90.9	114.0	167	166.7
LOS by Move:	F	D	D	E	C	F	F	F	F	F	F	F
HCM2kAvgQ:	6	12	22	11	12	78	34	30	30	19	35	35

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #21: SR 237-Grant Rd and El Camino Real



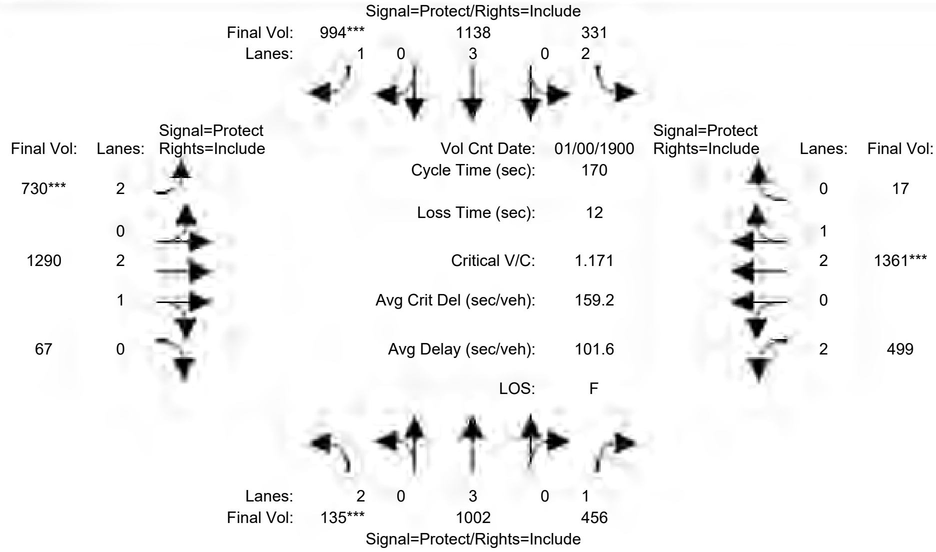
Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	189	1317	648	366	913	688	876	1900	76	534	1221	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	1317	648	366	913	688	876	1900	76	534	1221	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	0.12	2.00	2.94	0.06
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5384	215	3150	5496	104
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.37	0.12	0.16	0.39	0.28	0.35	0.35	0.17	0.22	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.34	0.34	0.11	0.39	0.39	0.27	0.33	0.33	0.16	0.21	0.21
Volume/Cap:	1.01	0.68	1.09	1.09	0.41	1.01	1.04	1.09	1.09	1.09	1.04	1.04
Delay/Veh:	148.7	49.0	118.2	149.7	37.9	89.2	104.0	106	105.8	137.4	104	103.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	148.7	49.0	118.2	149.7	37.9	89.2	104.0	106	105.8	137.4	104	103.7
LOS by Move:	F	D	F	F	D+	F	F	F	F	F	F	F
HCM2kAvgQ:	9	20	47	17	11	45	34	45	45	22	27	27

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #21: SR 237-Grant Rd and El Camino Real



Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	964	456	331	1119	994	730	1290	67	499	1361	17
Added Vol:	0	38	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	1002	456	331	1138	994	730	1290	67	499	1361	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	1002	456	331	1138	994	730	1290	67	499	1361	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	1002	456	331	1138	994	730	1290	67	499	1361	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	1002	456	331	1138	994	730	1290	67	499	1361	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.85	0.15	2.00	2.96	0.04
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5323	276	3150	5531	69
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.26	0.11	0.20	0.57	0.23	0.24	0.24	0.16	0.25	0.25
Crit Moves:	****					****	****				****	
Green/Cycle:	0.06	0.38	0.38	0.15	0.47	0.47	0.19	0.24	0.24	0.16	0.20	0.20
Volume/Cap:	0.73	0.46	0.69	0.69	0.42	1.20	1.20	1.01	1.01	1.01	1.20	1.20
Delay/Veh:	92.3	39.9	47.4	72.3	29.6	146.9	174.3	90.9	90.9	114.0	167	166.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.3	39.9	47.4	72.3	29.6	146.9	174.3	90.9	90.9	114.0	167	166.7
LOS by Move:	F	D	D	E	C	F	F	F	F	F	F	F
HCM2kAvgQ:	6	13	22	11	13	78	34	30	30	19	35	35

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #21: SR 237-Grant Rd and El Camino Real

Signal=Protect/Rights=Include
Final Vol: 688 941 366***
Lanes: 1 0 3 0 2

Final Vol: Lanes: Signal=Protect Rights=Include

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 170
Loss Time (sec): 12
Critical V/C: 1.085
Avg Crit Del (sec/veh): 117.4
Avg Delay (sec/veh): 93.8
LOS: F

Signal=Protect Rights=Include Lanes: Final Vol:

Eastbound Final Vol	Eastbound Lanes	Westbound Lanes	Westbound Final Vol
876	2	0	23
	0	1	
1900***	2	2	1221
	1	0	
76	0	2	534***

Lanes: 2 0 3 0 1
Final Vol: 189 1334 648***
Signal=Protect/Rights=Include

Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	189	1317	648	366	913	688	876	1900	76	534	1221	23
Added Vol:	0	17	0	0	28	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	189	1334	648	366	941	688	876	1900	76	534	1221	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	189	1334	648	366	941	688	876	1900	76	534	1221	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	1334	648	366	941	688	876	1900	76	534	1221	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	189	1334	648	366	941	688	876	1900	76	534	1221	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	0.12	2.00	2.94	0.06
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5384	215	3150	5496	104
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.37	0.12	0.17	0.39	0.28	0.35	0.35	0.17	0.22	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.34	0.34	0.11	0.39	0.39	0.27	0.33	0.33	0.16	0.21	0.21
Volume/Cap:	1.01	0.69	1.09	1.09	0.42	1.01	1.04	1.09	1.09	1.09	1.04	1.04
Delay/Veh:	148.7	49.2	118.2	149.7	38.2	89.2	104.0	106	105.8	137.4	104	103.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	148.7	49.2	118.2	149.7	38.2	89.2	104.0	106	105.8	137.4	104	103.7
LOS by Move:	F	D	F	F	D+	F	F	F	F	F	F	F
HCM2kAvgQ:	9	20	47	17	12	45	34	45	45	22	27	27

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing AM

Intersection #149: Clyde Ave/Maude Ave

Signal=Stop/Rights=Include
Final Vol: 14 0 54***
Lanes: 0 0 1! 0 0

Final Vol:	Lanes:	Signal=Stop Rights=Include			Signal=Stop Rights=Include	Lanes:	Final Vol:
14	0		Vol Cnt Date:	n/a		0	201
			Cycle Time (sec):	100			
	1		Loss Time (sec):	0		1	
40***	0		Critical V/C:	0.566		0	317***
	0		Avg Crit Del (sec/veh):	11.1		0	
0	0		Avg Delay (sec/veh):	11.1		0	0
			LOS:	B			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Stop/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	54	0	14	14	40	0	0	317	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	54	0	14	14	40	0	0	317	201
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	54	0	14	14	40	0	0	317	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	54	0	14	14	40	0	0	317	201
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	54	0	14	14	40	0	0	317	201
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	54	0	14	14	40	0	0	317	201
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.79	0.00	0.21	0.26	0.74	0.00	0.00	0.61	0.39
Final Sat.:	0	0	0	519	0	135	197	562	0	0	560	355
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.10	xxxx	0.10	0.07	0.07	xxxx	xxxx	0.57	0.57
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	8.6	0.0	8.6	7.9	7.9	0.0	0.0	11.8	11.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	8.6	0.0	8.6	7.9	7.9	0.0	0.0	11.8	11.8
LOS by Move:	*	*	*	A	*	A	A	A	*	*	B	B
ApproachDel:		xxxxxx			8.6			7.9			11.8	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			8.6			7.9			11.8	
LOS by Appr:		*			A			A			B	
AllWayAvgQ:	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.2	1.2	1.2

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0    54    0    14    14   40     0     0  317   201
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            572
Minor Approach Volume:          68
Minor Approach Volume Threshold: 368
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PM

Intersection #149: Clyde Ave/Maude Ave

Signal=Stop/Rights=Include
Final Vol: 6 0 140***
Lanes: 0 0 1! 0 0

Signal=Stop Rights=Include
Final Vol: Lanes:
9 0
1
137*** 0
0
0 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.196
Avg Crit Del (sec/veh): 8.3
Avg Delay (sec/veh): 8.3
LOS: A

Signal=Stop Rights=Include
Lanes: Final Vol:
0 57
1
0 71***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Stop/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	140	0	6	9	137	0	0	71	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	140	0	6	9	137	0	0	71	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	140	0	6	9	137	0	0	71	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	140	0	6	9	137	0	0	71	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	140	0	6	9	137	0	0	71	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	140	0	6	9	137	0	0	71	57
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.96	0.00	0.04	0.06	0.94	0.00	0.00	0.55	0.45
Final Sat.:	0	0	0	714	0	31	49	748	0	0	467	375
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.20	xxxx	0.20	0.18	0.18	xxxx	xxxx	0.15	0.15
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	8.7	0.0	8.7	8.3	8.3	0.0	0.0	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	8.7	0.0	8.7	8.3	8.3	0.0	0.0	7.8	7.8
LOS by Move:	*	*	*	A	*	A	A	A	*	*	A	A
ApproachDel:		xxxxxx			8.7			8.3			7.8	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			8.7			8.3			7.8	
LOS by Appr:		*			A			A			A	
AllWayAvgQ:	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

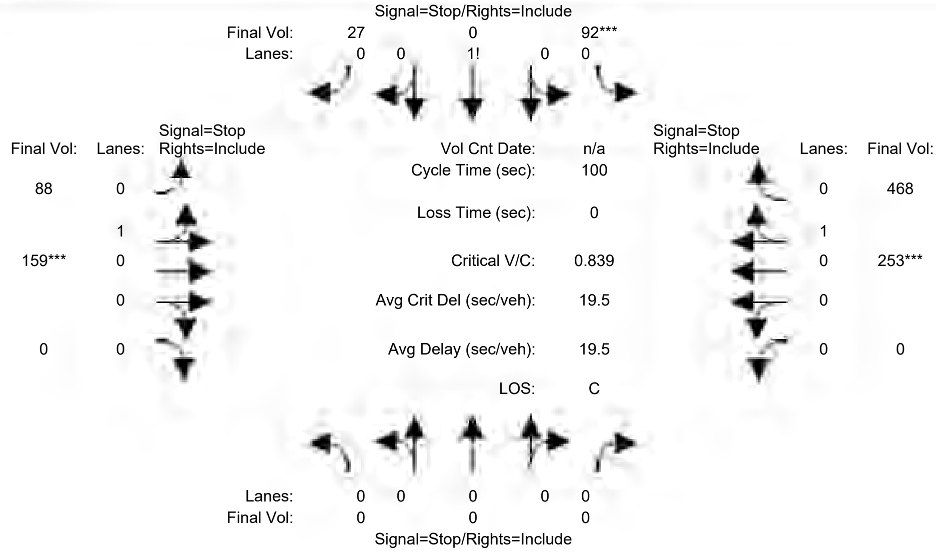
Future Volume Alternative: Peak Hour Warrant NOT Met

```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   140    0     6     9  137     0     0   71    57
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            274
Minor Approach Volume:          146
Minor Approach Volume Threshold: 565
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PP AM

Intersection #149: Clyde Ave/Maude Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	54	0	14	14	40	0	0	317	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	54	0	14	14	40	0	0	317	201
Added Vol:	0	0	0	38	0	13	74	119	0	0	-64	267
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	92	0	27	88	159	0	0	253	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	92	0	27	88	159	0	0	253	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	92	0	27	88	159	0	0	253	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	92	0	27	88	159	0	0	253	468
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.77	0.00	0.23	0.36	0.64	0.00	0.00	0.35	0.65
Final Sat.:	0	0	0	447	0	131	246	445	0	0	302	558
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.21	xxxx	0.21	0.36	0.36	xxxx	xxxx	0.84	0.84
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	10.2	0.0	10.2	10.7	10.7	0.0	0.0	24.1	24.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	10.2	0.0	10.2	10.7	10.7	0.0	0.0	24.1	24.1
LOS by Move:	*	*	*	B	*	B	B	B	*	*	C	C
ApproachDel:		xxxxxx			10.2			10.7			24.1	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			10.2			10.7			24.1	
LOS by Appr:		*			B			B			C	
AllWayAvgQ:	0.0	0.0	0.0	0.2	0.2	0.2	0.5	0.5	0.5	4.1	4.1	4.1

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met


```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0    92    0    27    88  159     0     0  253   468
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            968
Minor Approach Volume:          119
Minor Approach Volume Threshold: 228
--------------------------------------------------------------------------------
```

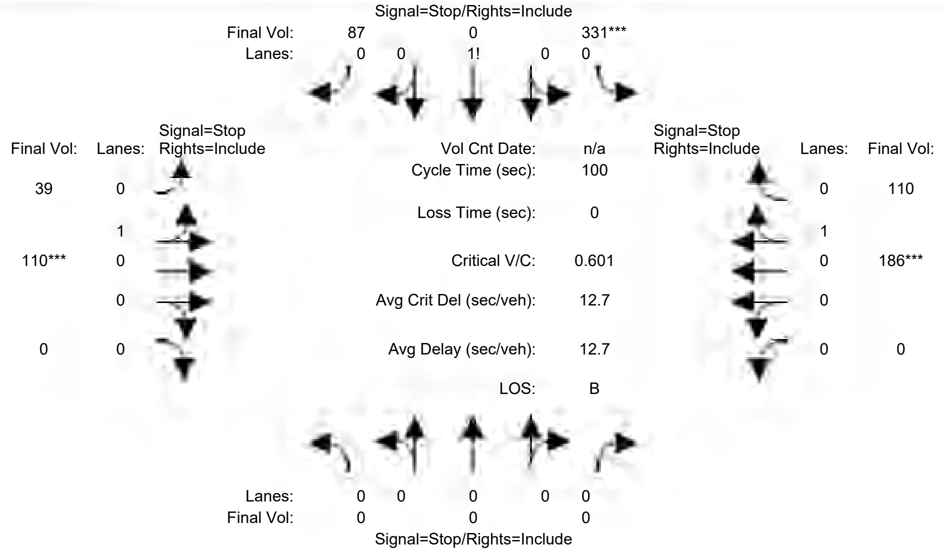
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing PP PM

Intersection #149: Clyde Ave/Maude Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	140	0	6	9	137	0	0	71	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	140	0	6	9	137	0	0	71	57
Added Vol:	0	0	0	191	0	79	30	-27	0	0	117	51
PasserByVol:	0	0	0	0	0	2	0	0	0	0	-2	2
Initial Fut:	0	0	0	331	0	87	39	110	0	0	186	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	331	0	87	39	110	0	0	186	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	331	0	87	39	110	0	0	186	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	331	0	87	39	110	0	0	186	110
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.79	0.00	0.21	0.26	0.74	0.00	0.00	0.63	0.37
Final Sat.:	0	0	0	551	0	145	162	458	0	0	433	256
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.60	xxxx	0.60	0.24	0.24	xxxx	xxxx	0.43	0.43
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	14.7	0.0	14.7	10.0	10.0	0.0	0.0	11.4	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	14.7	0.0	14.7	10.0	10.0	0.0	0.0	11.4	11.4
LOS by Move:	*	*	*	B	*	B	A	A	*	*	B	B
ApproachDel:		xxxxxx			14.7			10.0			11.4	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			14.7			10.0			11.4	
LOS by Appr:		*			B			A			B	
AllWayAvgQ:	0.0	0.0	0.0	1.3	1.3	1.3	0.3	0.3	0.3	0.6	0.6	0.6

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met


```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   331    0    87    39  110     0     0  186   110
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            445
Minor Approach Volume:          418
Minor Approach Volume Threshold: 435
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing AM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include
Final Vol: 0 23 11
Lanes: 0 0 1! 0 0

Signal=Stop Rights=Include (west approach)
Final Vol: 0, 0, 0
Lanes: 0, 0, 1!, 0, 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.289
Avg Crit Del (sec/veh): 8.5
Avg Delay (sec/veh): 8.5
LOS: B

Signal=Yield Rights=Include (east approach)
Lanes: 0, 0, 1!, 0, 0
Final Vol: 23, 0, 264

Lanes: 0 0 1! 0 0
Final Vol: 6 11 37
Signal=Uncontrol/Rights=Include

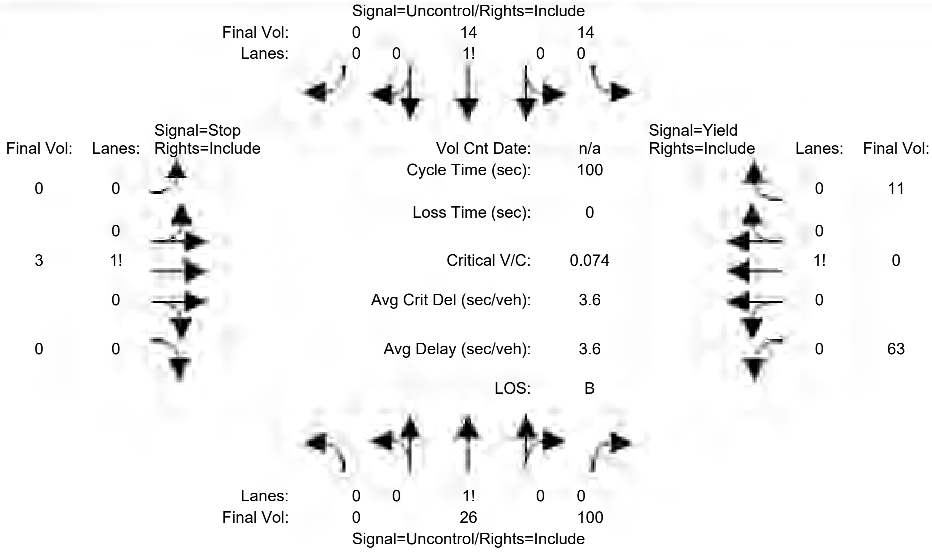
```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      6   11    37    11   23     0     0    0     0   264    0    23
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   6   11    37    11   23     0     0    0     0   264    0    23
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   6   11    37    11   23     0     0    0     0   264    0    23
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    6   11    37    11   23     0     0    0     0   264    0    23
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   6   11    37    11   23     0     0    0     0   264    0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   6.4  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   23 xxxx xxxxx    48 xxxx xxxxx    98  105    23    87   87    30
Potent Cap.: 1605 xxxx xxxxx  1572 xxxx xxxxx   889  789  1060   920  807  1051
Move Cap.:   1605 xxxx xxxxx  1572 xxxx xxxxx   862  780  1060   912  799  1051
Volume/Cap:  0.00 xxxx  xxxx  0.01 xxxx  xxxx  0.00 0.00  0.00  0.29 0.00  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx  922 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  1.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.7 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx            10.7
ApproachLOS:        *                *                *                B
Note: Queue reported is the number of cars per lane.
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```

```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0    0  1  0  0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    6   11    37    11   23     0     0    0     0   264    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              10.7
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.8]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=287]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=375]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0    0  1  0  0  0    0  0  1! 0  0    0  0  1! 0  0
Initial Vol:    6   11    37    11   23     0     0    0     0   264    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            88
Minor Approach Volume:          287
Minor Approach Volume Threshold: 868
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PM

Intersection #150: Logue Ave/Maude Ave




```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   26   100    14   14     0     0    3     0    63    0    11
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   26   100    14   14     0     0    3     0    63    0    11
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0   26   100    14   14     0     0    3     0    63    0    11
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   26   100    14   14     0     0    3     0    63    0    11
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   26   100    14   14     0     0    3     0    63    0    11
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx  6.5 xxxxx   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx  4.0 xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   126 xxxx xxxxx  xxxx  168 xxxxx   120  118    76
Potent Cap.: xxxx xxxx xxxxx  1473 xxxx xxxxx  xxxx  728 xxxxx   861  776   991
Move Cap.:   xxxx xxxx xxxxx  1473 xxxx xxxxx  xxxx  721 xxxxx   852  769   991
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx 0.00  xxxx  0.07 0.00  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx  0.0 xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.5 xxxx xxxxx xxxxx 10.0 xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    B     *     *    *     *
Movement:    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  870 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.5 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    A     *
ApproachDel:     xxxxxx           xxxxxx             10.0              9.5
ApproachLOS:       *                *                  B                A
Note: Queue reported is the number of cars per lane.
                         Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```

```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign       Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   26   100    14   14     0     0    3     0    63    0    11
ApproachDel:    xxxxxx           xxxxxx              10.0              9.5
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=231]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=74]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=231]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign       Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   26   100    14   14     0     0    3     0    63    0    11
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            154
Minor Approach Volume:          74
Minor Approach Volume Threshold: 718
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PP AM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include
Final Vol: 0 26 17
Lanes: 0 0 1! 0 0

Final Vol:	Lanes:	Signal=Stop Rights=Include			Signal=Yield Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a		0	56
			Cycle Time (sec):	100			
	0		Loss Time (sec):	0		0	
0	1!		Critical V/C:	0.430		1!	0
	0		Avg Crit Del (sec/veh):	9.9		0	
0	0		Avg Delay (sec/veh):	9.9		0	367
			LOS:	B			

Lanes: 0 0 1! 0 0
Final Vol: 6 24 77
Signal=Uncontrol/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	6	11	37	11	23	0	0	0	0	264	0	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	11	37	11	23	0	0	0	0	264	0	23
Added Vol:	0	13	40	6	3	0	0	0	0	103	0	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	24	77	17	26	0	0	0	0	367	0	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	24	77	17	26	0	0	0	0	367	0	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	24	77	17	26	0	0	0	0	367	0	56
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	6.4	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	26	xxxx	xxxxx	101	xxxx	xxxxx	163	173	26	135	135	63
Potent Cap.:	1601	xxxx	xxxxx	1504	xxxx	xxxxx	807	724	1056	864	760	1008
Move Cap.:	1601	xxxx	xxxxx	1504	xxxx	xxxxx	753	713	1056	854	749	1008
Volume/Cap:	0.00	xxxx	xxxx	0.01	xxxx	xxxx	0.00	0.00	0.00	0.43	0.00	0.06
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	872	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.0	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:		xxxxxx			xxxxxx			xxxxxx			13.0	
ApproachLOS:		*			*			*			B	

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

Intersection #150 Logue Ave/Maude Ave

Future Volume Alternative: Peak Hour Warrant NOT Met

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   24    77    17   26     0     0    0     0   367    0    56
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              13.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=423]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=573]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

```
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   24    77    17   26     0     0    0     0   367    0    56
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             150
Minor Approach Volume:           423
Minor Approach Volume Threshold: 725
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing PP PM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include
Final Vol: 0 21 27
Lanes: 0 0 1! 0 0

Signal=Stop Rights=Include | Signal=Yield Rights=Include

Final Vol:	Lanes:				Lanes:	Final Vol:
0	0	Vol Cnt Date:	n/a		0	14
		Cycle Time (sec):	100			
	0	Loss Time (sec):	0		0	
3	1!	Critical V/C:	0.182		1!	0
	0	Avg Crit Del (sec/veh):	4.2		0	
0	0	Avg Delay (sec/veh):	4.2		0	134
		LOS:	B			

Lanes: 0 0 1! 0 0
Final Vol: 0 27 215
Signal=Uncontrol/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	26	100	14	14	0	0	3	0	63	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	26	100	14	14	0	0	3	0	63	0	11
Added Vol:	0	1	113	13	7	0	0	0	0	68	0	3
PasserByVol:	0	0	2	0	0	0	0	0	0	3	0	0
Initial Fut:	0	27	215	27	21	0	0	3	0	134	0	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	27	215	27	21	0	0	3	0	134	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	27	215	27	21	0	0	3	0	134	0	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	6.5	xxxxx	7.1	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	4.0	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	242	xxxx	xxxxx	xxxx	317	xxxxx	211	210	135
Potent Cap.:	xxxx	xxxx	xxxxx	1336	xxxx	xxxxx	xxxx	602	xxxxx	750	691	920
Move Cap.:	xxxx	xxxx	xxxxx	1336	xxxx	xxxxx	xxxx	590	xxxxx	736	677	920
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	0.01	xxxx	0.18	0.00	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	11.1	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	B	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	750	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:		xxxxxx			xxxxxx			11.1			11.0	
ApproachLOS:		*			*			B			B	

Note: Queue reported is the number of cars per lane.

Peak Hour Delay Signal Warrant Report

Intersection #150 Logue Ave/Maude Ave

Future Volume Alternative: Peak Hour Warrant NOT Met

```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   27   215    27   21     0     0    3     0   134    0    14
ApproachDel:    xxxxxx           xxxxxx              11.1             11.0
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=441]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=148]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=441]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   27   215    27   21     0     0    3     0   134    0    14
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             290
Minor Approach Volume:           148
Minor Approach Volume Threshold: 550
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1027: Moffett Boulevard and Middlefield Road

Signal=Protect/Rights=Include
Final Vol: 264*** 257 79
Lanes: 0 1 1 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	120			
159***	1					0	81
			Loss Time (sec):	12			
	0					1	
337	1		Critical V/C:	0.573		1	725***
	1		Avg Crit Del (sec/veh):	36.7		0	
59	0		Avg Delay (sec/veh):	37.1		1	152
			LOS:	D+			

Lanes: 1 0 1 1 0
Final Vol: 98*** 406 113
Signal=Protect/Rights=Include

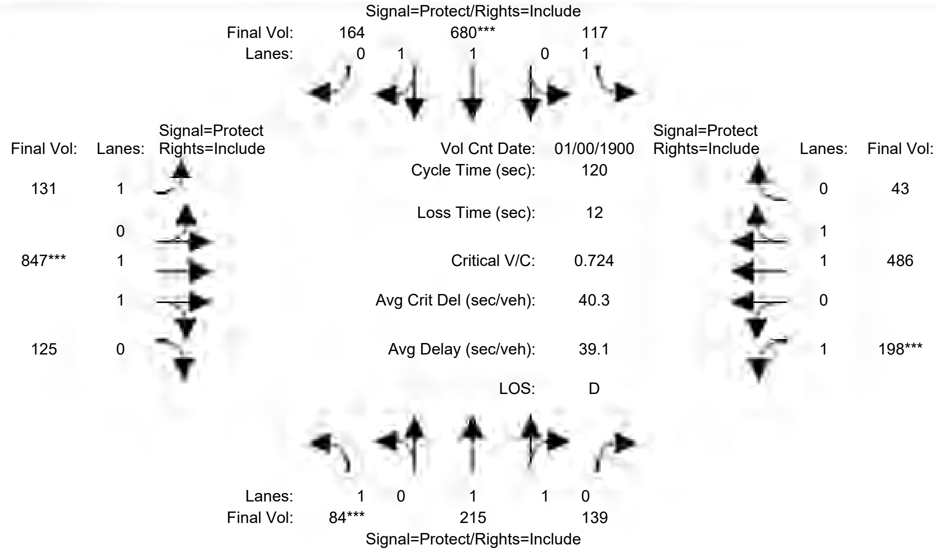
Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	98	406	113	79	257	264	159	337	59	152	725	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	406	113	79	257	264	159	337	59	152	725	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	406	113	79	257	264	159	337	59	152	725	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	406	113	79	257	264	159	337	59	152	725	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	406	113	79	257	264	159	337	59	152	725	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	406	113	79	257	264	159	337	59	152	725	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.55	0.45	1.00	1.00	1.00	1.00	1.69	0.31	1.00	1.79	0.21
Final Sat.:	1750	2894	805	1750	1900	1750	1750	3148	551	1750	3328	372
Capacity Analysis Module:												
Vol/Sat:	0.06	0.14	0.14	0.05	0.14	0.15	0.09	0.11	0.11	0.09	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.10	0.26	0.26	0.11	0.26	0.26	0.16	0.30	0.30	0.24	0.38	0.38
Volume/Cap:	0.57	0.55	0.55	0.43	0.51	0.57	0.57	0.36	0.36	0.36	0.57	0.57
Delay/Veh:	56.4	39.4	39.4	51.8	38.1	39.2	49.6	33.4	33.4	38.3	30.0	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	39.4	39.4	51.8	38.1	39.2	49.6	33.4	33.4	38.3	30.0	30.0
LOS by Move:	E+	D	D	D-	D+	D	D	C-	C-	D+	C	C
HCM2kAvgQ:	4	8	8	3	8	9	7	6	6	5	12	12

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1027: Moffett Boulevard and Middlefield Road



Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	84	215	139	117	680	164	131	847	125	198	486	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	215	139	117	680	164	131	847	125	198	486	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	215	139	117	680	164	131	847	125	198	486	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	215	139	117	680	164	131	847	125	198	486	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	215	139	117	680	164	131	847	125	198	486	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	215	139	117	680	164	131	847	125	198	486	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.19	0.81	1.00	1.60	0.40	1.00	1.74	0.26	1.00	1.83	0.17
Final Sat.:	1750	2246	1452	1750	2981	719	1750	3224	476	1750	3399	301
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.07	0.23	0.23	0.07	0.26	0.26	0.11	0.14	0.14
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.22	0.22	0.16	0.31	0.31	0.18	0.36	0.36	0.16	0.34	0.34
Volume/Cap:	0.72	0.43	0.43	0.43	0.72	0.72	0.42	0.72	0.72	0.72	0.42	0.42
Delay/Veh:	75.1	40.3	40.3	46.8	38.8	38.8	44.7	35.1	35.1	57.4	30.7	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.1	40.3	40.3	46.8	38.8	38.8	44.7	35.1	35.1	57.4	30.7	30.7
LOS by Move:	E-	D	D	D	D+	D+	D	D+	D+	E+	C	C
HCM2kAvgQ:	4	6	6	4	14	14	5	17	17	8	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #1027: Moffett Boulevard and Middlefield Road

Signal=Protect/Rights=Include
Final Vol: 264*** 257 79
Lanes: 0 1 1 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
159***	1					0	81
	0		Loss Time (sec):	12		1	
360	1		Critical V/C:	0.581		1	751***
	1		Avg Crit Del (sec/veh):	36.6		0	
59	0		Avg Delay (sec/veh):	37.3		1	174
			LOS:	D+			

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 120

Lanes: 1 0 1 1 0
Final Vol: 98*** 406 127
Signal=Protect/Rights=Include

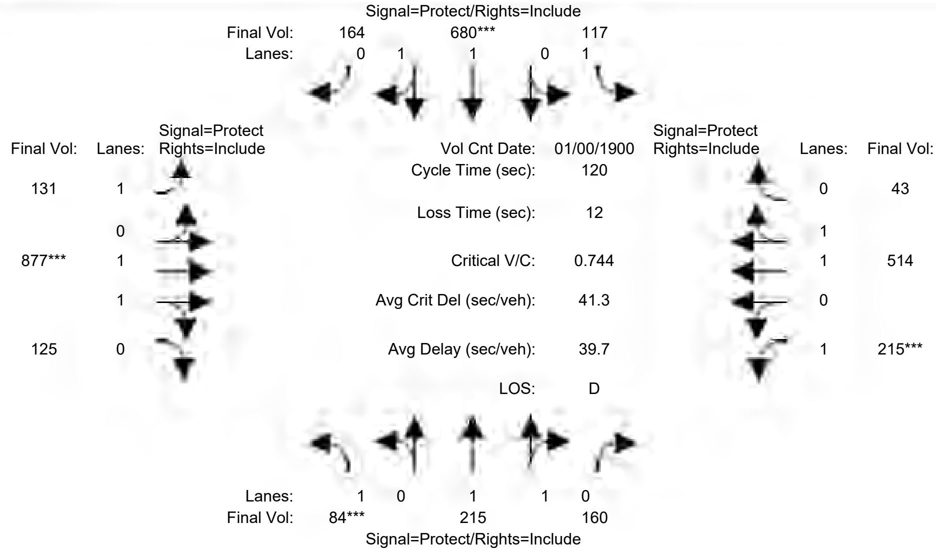
Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	98	406	113	79	257	264	159	337	59	152	725	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	406	113	79	257	264	159	337	59	152	725	81
Added Vol:	0	0	14	0	0	0	0	23	0	22	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	406	127	79	257	264	159	360	59	174	751	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	406	127	79	257	264	159	360	59	174	751	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	406	127	79	257	264	159	360	59	174	751	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	406	127	79	257	264	159	360	59	174	751	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.51	0.49	1.00	1.00	1.00	1.00	1.71	0.29	1.00	1.80	0.20
Final Sat.:	1750	2818	881	1750	1900	1750	1750	3179	521	1750	3340	360
Capacity Analysis Module:												
Vol/Sat:	0.06	0.14	0.14	0.05	0.14	0.15	0.09	0.11	0.11	0.10	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.10	0.25	0.25	0.10	0.26	0.26	0.16	0.29	0.29	0.25	0.39	0.39
Volume/Cap:	0.58	0.57	0.57	0.44	0.52	0.58	0.58	0.39	0.39	0.39	0.58	0.58
Delay/Veh:	56.9	39.9	39.9	52.3	38.5	39.7	50.1	34.4	34.4	37.6	29.7	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.9	39.9	39.9	52.3	38.5	39.7	50.1	34.4	34.4	37.6	29.7	29.7
LOS by Move:	E+	D	D	D-	D+	D	D	C-	C-	D+	C	C
HCM2kAvgQ:	4	9	9	3	8	9	7	6	6	5	12	12

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #1027: Moffett Boulevard and Middlefield Road



Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	84	215	139	117	680	164	131	847	125	198	486	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	215	139	117	680	164	131	847	125	198	486	43
Added Vol:	0	0	21	0	0	0	0	30	0	17	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	215	160	117	680	164	131	877	125	215	514	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	215	160	117	680	164	131	877	125	215	514	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	215	160	117	680	164	131	877	125	215	514	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	215	160	117	680	164	131	877	125	215	514	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.12	0.88	1.00	1.60	0.40	1.00	1.74	0.26	1.00	1.84	0.16
Final Sat.:	1750	2120	1578	1750	2981	719	1750	3238	462	1750	3414	286
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.07	0.23	0.23	0.07	0.27	0.27	0.12	0.15	0.15
Crit Moves:	****				****			****		****		
Green/Cycle:	0.06	0.22	0.22	0.15	0.31	0.31	0.18	0.36	0.36	0.17	0.35	0.35
Volume/Cap:	0.74	0.45	0.45	0.45	0.74	0.74	0.43	0.74	0.74	0.74	0.43	0.43
Delay/Veh:	78.4	40.6	40.6	48.0	40.1	40.1	45.0	35.6	35.6	57.7	29.8	29.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.4	40.6	40.6	48.0	40.1	40.1	45.0	35.6	35.6	57.7	29.8	29.8
LOS by Move:	E-	D	D	D	D	D	D	D+	D+	E+	C	C
HCM2kAvgQ:	4	6	6	4	15	15	5	18	18	8	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Ignore
Final Vol: 0 148 48***
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
97***	1		Cycle Time (sec):	138		1	112
	0		Loss Time (sec):	12		0	
842	2		Critical V/C:	0.487		2	1126***
	0		Avg Crit Del (sec/veh):	43.1		0	
101	1		Avg Delay (sec/veh):	41.6		1	141
			LOS:	D			

Lanes: 2 0 1 1 0
Final Vol: 159 195*** 74
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	41	41	41	19	19	19	21	69	69	21	74	74
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	159	195	74	48	148	231	97	842	101	141	1126	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	195	74	48	148	231	97	842	101	141	1126	112
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	195	74	48	148	231	97	842	101	141	1126	112
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	195	74	48	148	0	97	842	101	141	1126	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	195	74	48	148	0	97	842	101	141	1126	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	195	74	48	148	0	97	842	101	141	1126	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.43	0.57	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2681	1018	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.03	0.04	0.00	0.06	0.22	0.06	0.08	0.30	0.06
Crit Moves:		****		****			****				****	
Green/Cycle:	0.25	0.25	0.25	0.11	0.11	0.00	0.13	0.44	0.68	0.13	0.44	0.56
Volume/Cap:	0.21	0.30	0.30	0.24	0.34	0.00	0.44	0.51	0.08	0.61	0.67	0.11
Delay/Veh:	50.2	51.4	51.4	68.1	68.7	0.0	69.0	34.4	9.0	72.9	37.8	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	51.4	51.4	68.1	68.7	0.0	69.0	34.4	9.0	72.9	37.8	17.6
LOS by Move:	D	D-	D-	E	E	A	E	C-	A	E	D+	B
HCM2kAvgQ:	4	6	6	2	3	0	5	15	2	7	22	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Overlap
Final Vol: 343 343*** 65
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	132			
157	1					1	68
			Loss Time (sec):	21			
	0					0	
1158***	2		Critical V/C:	0.734		2	993
	0		Avg Crit Del (sec/veh):	65.5		0	
228	1		Avg Delay (sec/veh):	58.2		1	168***
			LOS:	E+			

Lanes: 2 0 1 1 0
Final Vol: 148*** 187 74
Signal=Protect/Rights=Include

```
Street Name:         Moffett Boulevard               Central Expressway
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    30    46    46   10    26    26   18    59    59   17    58    58
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM
Base Vol:     148   187    74   65   343   343  157  1158   228  168   993    68
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:  148   187    74   65   343   343  157  1158   228  168   993    68
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:  148   187    74   65   343   343  157  1158   228  168   993    68
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:   148   187    74   65   343   343  157  1158   228  168   993    68
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:  148   187    74   65   343   343  157  1158   228  168   993    68
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:  148   187    74   65   343   343  157  1158   228  168   993    68
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  0.70  0.84  0.81 0.78  0.85  0.78 0.78  0.85  0.78 0.78  0.85  0.78
Lanes:       2.00  1.42  0.58 1.00  2.00  1.00 1.00  2.00  1.00 1.00  2.00  1.00
Final Sat.:  2677  2253   891 1488  3230  1488 1488  3230  1488 1488  3230  1488
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06  0.08  0.08 0.04  0.11  0.23 0.11  0.36  0.15 0.11  0.31  0.05
Crit Moves:  ****                   ****              ****       ****
Green/Cycle: 0.20  0.30  0.30 0.07  0.17  0.29 0.12  0.39  0.39 0.11  0.38  0.44
Volume/Cap:  0.28  0.28  0.28 0.67  0.62  0.80 0.90  0.93  0.40 1.02  0.81  0.10
Delay/Veh:   52.6  41.0  41.0 86.4  61.2  60.9 106.7 57.2  34.6 142.4 46.8  24.8
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:  52.6  41.0  41.0 86.4  61.2  60.9 106.7 57.2  34.6 142.4 46.8  24.8
LOS by Move:   D-     D     D    F     E     E    F    E+    C-    F     D     C
HCM2kAvgQ:      4     6     6    3     8    17   11    31    10   11    23     3
Note: Queue reported is the number of cars per lane.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Ignore
Final Vol: 0 160 48***
Lanes: 1 0 2 0 1

Signal=Protect
Rights=Overlap

Final Vol:	Lanes:		
106***	1	Vol Cnt Date:	01/00/1900
		Cycle Time (sec):	138
	0	Loss Time (sec):	12
855	2	Critical V/C:	0.498
	0	Avg Crit Del (sec/veh):	43.5
101	1	Avg Delay (sec/veh):	42.0
		LOS:	D

Signal=Protect
Rights=Overlap

Lanes:	Final Vol:
1	112
0	
2	1141***
0	
1	142

Lanes: 2 0 1 1 0
Final Vol: 159 199*** 74
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	41	41	41	19	19	19	21	69	69	21	74	74
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	159	195	74	48	148	231	97	842	101	141	1126	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	195	74	48	148	231	97	842	101	141	1126	112
Added Vol:	0	4	0	0	12	10	9	13	0	1	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	199	74	48	160	241	106	855	101	142	1141	112
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	199	74	48	160	0	106	855	101	142	1141	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	199	74	48	160	0	106	855	101	142	1141	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	199	74	48	160	0	106	855	101	142	1141	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.44	0.56	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2696	1003	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.03	0.04	0.00	0.06	0.23	0.06	0.08	0.30	0.06
Crit Moves:		****		****			****				****	
Green/Cycle:	0.25	0.25	0.25	0.11	0.11	0.00	0.13	0.44	0.68	0.13	0.44	0.56
Volume/Cap:	0.21	0.30	0.30	0.24	0.37	0.00	0.48	0.52	0.08	0.61	0.68	0.11
Delay/Veh:	50.2	51.5	51.5	68.1	69.0	0.0	69.6	34.5	9.0	73.1	38.1	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	51.5	51.5	68.1	69.0	0.0	69.6	34.5	9.0	73.1	38.1	17.6
LOS by Move:	D	D-	D-	E	E	A	E	C-	A	E	D+	B
HCM2kAvgQ:	4	6	6	2	4	0	6	15	2	7	22	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Overlap
Final Vol: 352 351*** 65
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
166	1		Cycle Time (sec):	132		1	68
	0		Loss Time (sec):	21		0	
1173***	2		Critical V/C:	0.743		2	1006
	0		Avg Crit Del (sec/veh):	66.9		0	
228	1		Avg Delay (sec/veh):	59.9		1	169***
			LOS:	E+			

Lanes: 2 0 1 1 0
Final Vol: 148*** 199 75
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	46	46	10	26	26	18	59	59	17	58	58
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	148	187	74	65	343	343	157	1158	228	168	993	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	187	74	65	343	343	157	1158	228	168	993	68
Added Vol:	0	12	1	0	8	9	9	15	0	1	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	199	75	65	351	352	166	1173	228	169	1006	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	199	75	65	351	352	166	1173	228	169	1006	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	199	75	65	351	352	166	1173	228	169	1006	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	148	199	75	65	351	352	166	1173	228	169	1006	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.84	0.81	0.78	0.85	0.78	0.78	0.85	0.78	0.78	0.85	0.78
Lanes:	2.00	1.44	0.56	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2677	2284	861	1488	3230	1488	1488	3230	1488	1488	3230	1488
Capacity Analysis Module:												
Vol/Sat:	0.06	0.09	0.09	0.04	0.11	0.24	0.11	0.36	0.15	0.11	0.31	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.20	0.30	0.30	0.07	0.17	0.29	0.12	0.39	0.39	0.11	0.38	0.44
Volume/Cap:	0.28	0.29	0.29	0.67	0.64	0.82	0.95	0.94	0.40	1.02	0.82	0.10
Delay/Veh:	52.6	41.2	41.2	86.4	61.7	63.0	120.0	59.2	34.6	144.0	47.4	24.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	41.2	41.2	86.4	61.7	63.0	120.0	59.2	34.6	144.0	47.4	24.8
LOS by Move:	D-	D	D	F	E	E	F	E+	C-	F	D	C
HCM2kAvgQ:	4	6	6	3	8	18	12	31	10	11	23	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1036: Mathilda Avenue and Indio Aveue

Signal=Protect/Rights=Overlap
Final Vol: 64 851 22***
Lanes: 1 0 3 0 1

Final Vol: Lanes: Signal=Protect Rights=Overlap

11*** 1
0
0 0
1
247 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 160
Loss Time (sec): 12
Critical V/C: 0.758
Avg Crit Del (sec/veh): 37.2
Avg Delay (sec/veh): 36.7
LOS: D+

Signal=Protect Rights=Overlap Lanes: Final Vol:

0 428
1
0 15***
0
1 104

Lanes: 1 0 3 0 1
Final Vol: 94 2488*** 114
Signal=Protect/Rights=Overlap

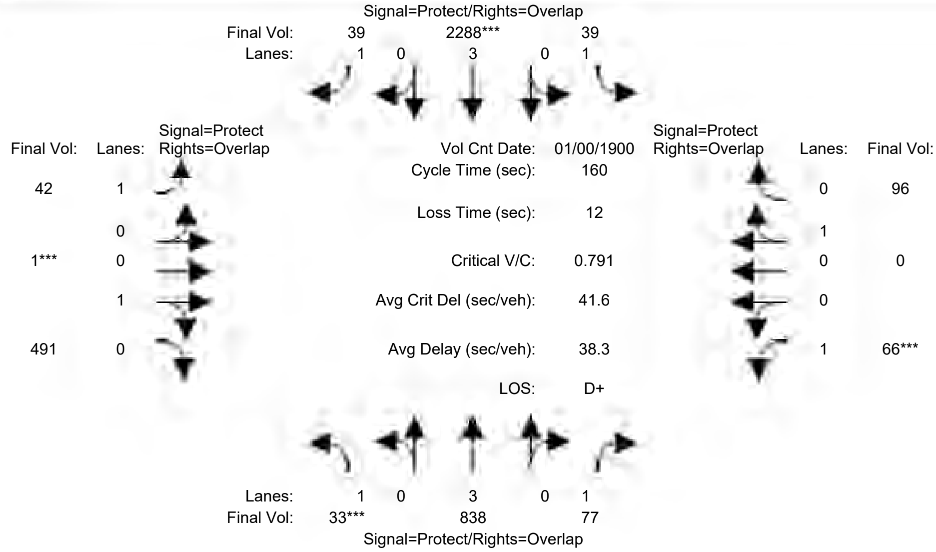
Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	94	2488	114	22	851	64	11	0	247	104	15	428
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	2488	114	22	851	64	11	0	247	104	15	428
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	2488	114	22	851	64	11	0	247	104	15	428
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	2488	114	22	851	64	11	0	247	104	15	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	2488	114	22	851	64	11	0	247	104	15	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	2488	114	22	851	64	11	0	247	104	15	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.95	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.00	1.00	1.00	0.03	0.97
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	0	1800	1750	61	1739
Capacity Analysis Module:												
Vol/Sat:	0.05	0.44	0.07	0.01	0.15	0.04	0.01	0.00	0.14	0.06	0.25	0.25
Crit Moves:		****		****			****				****	
Green/Cycle:	0.15	0.54	0.68	0.04	0.43	0.47	0.04	0.00	0.20	0.14	0.30	0.35
Volume/Cap:	0.35	0.82	0.10	0.29	0.35	0.08	0.14	0.00	0.70	0.41	0.82	0.71
Delay/Veh:	61.4	32.4	8.8	76.2	31.1	23.4	74.5	0.0	65.7	63.5	61.0	49.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.4	32.4	8.8	76.2	31.1	23.4	74.5	0.0	65.7	63.5	61.0	49.3
LOS by Move:	E	C-	A	E-	C	C	E	A	E	E	E	D
HCM2kAvgQ:	5	34	2	1	9	2	1	0	13	5	23	20

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1036: Mathilda Avenue and Indio Aveue



Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	33	838	77	39	2288	39	42	1	491	66	0	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	838	77	39	2288	39	42	1	491	66	0	96
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	838	77	39	2288	39	42	1	491	66	0	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	838	77	39	2288	39	42	1	491	66	0	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	838	77	39	2288	39	42	1	491	66	0	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	838	77	39	2288	39	42	1	491	66	0	96
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.01	0.99	1.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	4	1796	1750	0	1800
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.04	0.02	0.40	0.02	0.02	0.27	0.27	0.04	0.00	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.04	0.42	0.46	0.12	0.50	0.72	0.23	0.34	0.38	0.05	0.00	0.17
Volume/Cap:	0.43	0.35	0.10	0.18	0.81	0.03	0.11	0.81	0.72	0.81	0.00	0.31
Delay/Veh:	78.4	32.0	24.2	63.2	35.7	6.4	49.3	56.2	45.7	118.6	0.0	58.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.4	32.0	24.2	63.2	35.7	6.4	49.3	56.2	45.7	118.6	0.0	58.7
LOS by Move:	E-	C-	C	E	D+	A	D	E+	D	F	A	E+
HCM2kAvgQ:	2	9	2	2	31	1	2	24	22	5	0	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #1036: Mathilda Avenue and Indio Aveue

Signal=Protect/Rights=Overlap
Final Vol: 64 853 51***
Lanes: 1 0 3 0 1

Final Vol: | Lanes: | Signal=Protect Rights=Overlap
11*** 1
0
0 0
1
247 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 160
Loss Time (sec): 12
Critical V/C: 0.795
Avg Crit Del (sec/veh): 39.8
Avg Delay (sec/veh): 38.5
LOS: D+

Signal=Protect Rights=Overlap | Lanes: | Final Vol:
0 456
1
0 15***
0
1 104

Lanes: 1 0 3 0 1
Final Vol: 94 2500*** 114
Signal=Protect/Rights=Overlap

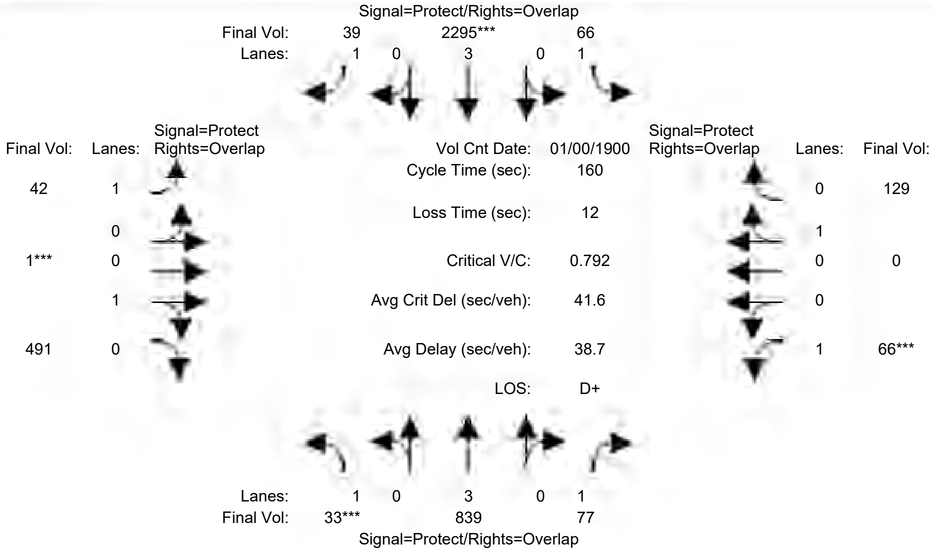
Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	94	2488	114	22	851	64	11	0	247	104	15	428
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	2488	114	22	851	64	11	0	247	104	15	428
Added Vol:	0	12	0	29	2	0	0	0	0	0	0	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	2500	114	51	853	64	11	0	247	104	15	456
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	2500	114	51	853	64	11	0	247	104	15	456
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	2500	114	51	853	64	11	0	247	104	15	456
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	2500	114	51	853	64	11	0	247	104	15	456
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.95	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.00	1.00	1.00	0.03	0.97
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	0	1800	1750	57	1743
Capacity Analysis Module:												
Vol/Sat:	0.05	0.44	0.07	0.03	0.15	0.04	0.01	0.00	0.14	0.06	0.26	0.26
Crit Moves:		****		****			****				****	
Green/Cycle:	0.15	0.52	0.67	0.04	0.42	0.46	0.04	0.00	0.19	0.15	0.31	0.36
Volume/Cap:	0.36	0.84	0.10	0.67	0.36	0.08	0.14	0.00	0.71	0.40	0.84	0.73
Delay/Veh:	61.9	34.4	9.2	95.4	31.9	24.1	74.5	0.0	66.8	62.7	61.7	49.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.9	34.4	9.2	95.4	31.9	24.1	74.5	0.0	66.8	62.7	61.7	49.2
LOS by Move:	E	C-	A	F	C	C	E	A	E	E	E	D
HCM2kAvgQ:	5	36	2	3	9	2	1	0	13	5	24	22

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #1036: Mathilda Avenue and Indio Aveue



Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	33	838	77	39	2288	39	42	1	491	66	0	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	838	77	39	2288	39	42	1	491	66	0	96
Added Vol:	0	1	0	27	7	0	0	0	0	0	0	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	839	77	66	2295	39	42	1	491	66	0	129
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	839	77	66	2295	39	42	1	491	66	0	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	839	77	66	2295	39	42	1	491	66	0	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	839	77	66	2295	39	42	1	491	66	0	129
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.01	0.99	1.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	4	1796	1750	0	1800
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.04	0.04	0.40	0.02	0.02	0.27	0.27	0.04	0.00	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.04	0.42	0.46	0.12	0.50	0.71	0.22	0.34	0.38	0.05	0.00	0.17
Volume/Cap:	0.43	0.35	0.09	0.30	0.81	0.03	0.11	0.81	0.72	0.81	0.00	0.42
Delay/Veh:	78.4	32.0	24.1	64.6	35.7	6.7	50.5	56.3	45.8	119.0	0.0	60.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.4	32.0	24.1	64.6	35.7	6.7	50.5	56.3	45.8	119.0	0.0	60.2
LOS by Move:	E-	C	C	E	D+	A	D	E+	D	F	A	E
HCM2kAvgQ:	2	9	2	3	31	1	2	25	22	5	0	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include
Final Vol: 185 18*** 110
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (west approach) | Signal=Protect Rights=Include (east approach)

Final Vol:	Lanes:				Lanes:	Final Vol:
104***	1		Vol Cnt Date:	01/00/1900		
			Cycle Time (sec):	70	0	86
	0		Loss Time (sec):	9	1	
400	1		Critical V/C:	0.510	1	678***
	1		Avg Crit Del (sec/veh):	18.0	0	
33	0		Avg Delay (sec/veh):	19.2	1	13
			LOS:	B-		

Lanes: 0 0 1! 0 0
Final Vol: 100 32 30
Signal=Permit/Rights=Include

Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	100	32	30	110	18	185	104	400	33	13	678	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	32	30	110	18	185	104	400	33	13	678	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	32	30	110	18	185	104	400	33	13	678	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	32	30	110	18	185	104	400	33	13	678	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	32	30	110	18	185	104	400	33	13	678	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	32	30	110	18	185	104	400	33	13	678	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.62	0.20	0.18	0.35	0.06	0.59	1.00	1.84	0.16	1.00	1.77	0.23
Final Sat.:	1080	346	324	615	101	1034	1750	3418	282	1750	3283	416
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.12	0.12	0.01	0.21	0.21
Crit Moves:					****		****				****	
Green/Cycle:	0.35	0.35	0.35	0.35	0.35	0.35	0.12	0.23	0.23	0.29	0.40	0.40
Volume/Cap:	0.26	0.26	0.26	0.51	0.51	0.51	0.51	0.50	0.50	0.03	0.51	0.51
Delay/Veh:	16.5	16.5	16.5	18.7	18.7	18.7	31.2	23.7	23.7	18.0	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	16.5	16.5	18.7	18.7	18.7	31.2	23.7	23.7	18.0	15.9	15.9
LOS by Move:	B	B	B	B-	B-	B-	C	C	C	B	B	B
HCM2kAvgQ:	3	3	3	6	6	6	2	4	4	0	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include (south leg)
Final Vol: 68 12*** 58
Lanes: 0 0 1! 0 0

Westbound leg (left side) — Signal=Protect, Rights=Include

Final Vol:	Lanes:
90	1
	0
1019***	1
	1
98	0

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	70
Loss Time (sec):	9
Critical V/C:	0.459
Avg Crit Del (sec/veh):	11.8
Avg Delay (sec/veh):	11.9
LOS:	B+

Signal=Protect, Rights=Include

Lanes:	Final Vol:
0	49
1	
1	594
0	
1	34***

Lanes: 0 0 1! 0 0
Final Vol: 46 16 8
Signal=Permit/Rights=Include

Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	46	16	8	58	12	68	90	1019	98	34	594	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	16	8	58	12	68	90	1019	98	34	594	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	16	8	58	12	68	90	1019	98	34	594	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	16	8	58	12	68	90	1019	98	34	594	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	16	8	58	12	68	90	1019	98	34	594	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	16	8	58	12	68	90	1019	98	34	594	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.66	0.23	0.11	0.42	0.09	0.49	1.00	1.82	0.18	1.00	1.84	0.16
Final Sat.:	1150	400	200	736	152	862	1750	3375	325	1750	3418	282
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.08	0.08	0.08	0.05	0.30	0.30	0.02	0.17	0.17
Crit Moves:					****			****		****		
Green/Cycle:	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.58	0.58	0.14	0.56	0.56
Volume/Cap:	0.27	0.27	0.27	0.52	0.52	0.52	0.31	0.52	0.52	0.14	0.31	0.31
Delay/Veh:	26.8	26.8	26.8	29.3	29.3	29.3	26.4	9.2	9.2	26.5	8.4	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.8	26.8	26.8	29.3	29.3	29.3	26.4	9.2	9.2	26.5	8.4	8.4
LOS by Move:	C	C	C	C	C	C	C	A	A	C	A	A
HCM2kAvgQ:	2	2	2	4	4	4	2	7	7	1	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include
Final Vol: 185 18*** 110
Lanes: 0 0 1! 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	70			
104***	1					0	86
			Loss Time (sec):	9			
	0					1	
437	1		Critical V/C:	0.525		1	726***
	1		Avg Crit Del (sec/veh):	17.9		0	
33	0		Avg Delay (sec/veh):	19.1		1	13
			LOS:	B-			

Lanes: 0 0 1! 0 0
Final Vol: 100 32 30
Signal=Permit/Rights=Include

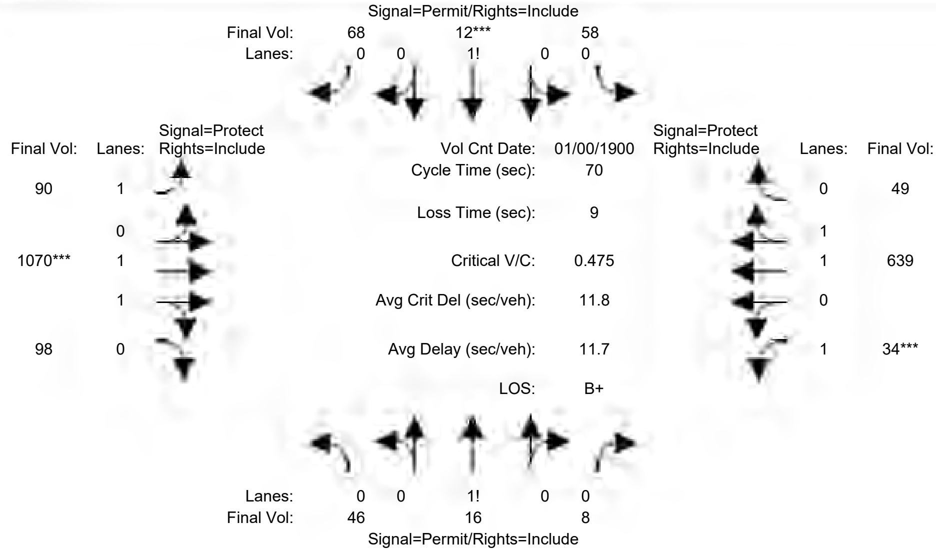
Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	100	32	30	110	18	185	104	400	33	13	678	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	32	30	110	18	185	104	400	33	13	678	86
Added Vol:	0	0	0	0	0	0	0	37	0	0	48	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	32	30	110	18	185	104	437	33	13	726	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	32	30	110	18	185	104	437	33	13	726	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	32	30	110	18	185	104	437	33	13	726	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	32	30	110	18	185	104	437	33	13	726	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.62	0.20	0.18	0.35	0.06	0.59	1.00	1.86	0.14	1.00	1.78	0.22
Final Sat.:	1080	346	324	615	101	1034	1750	3440	260	1750	3308	392
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.13	0.13	0.01	0.22	0.22
Crit Moves:					****		****				****	
Green/Cycle:	0.34	0.34	0.34	0.34	0.34	0.34	0.11	0.25	0.25	0.28	0.42	0.42
Volume/Cap:	0.27	0.27	0.27	0.53	0.53	0.53	0.53	0.51	0.51	0.03	0.53	0.53
Delay/Veh:	17.0	17.0	17.0	19.4	19.4	19.4	31.9	23.0	23.0	18.2	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.0	17.0	17.0	19.4	19.4	19.4	31.9	23.0	23.0	18.2	15.5	15.5
LOS by Move:	B	B	B	B-	B-	B-	C	C	C	B-	B	B
HCM2kAvgQ:	3	3	3	6	6	6	2	4	4	0	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #1038: Middlefield Road and Easy Street



Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	46	16	8	58	12	68	90	1019	98	34	594	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	16	8	58	12	68	90	1019	98	34	594	49
Added Vol:	0	0	0	0	0	0	0	51	0	0	45	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	16	8	58	12	68	90	1070	98	34	639	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	16	8	58	12	68	90	1070	98	34	639	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	16	8	58	12	68	90	1070	98	34	639	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	16	8	58	12	68	90	1070	98	34	639	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.66	0.23	0.11	0.42	0.09	0.49	1.00	1.83	0.17	1.00	1.85	0.15
Final Sat.:	1150	400	200	736	152	862	1750	3389	310	1750	3436	264
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.08	0.08	0.08	0.05	0.32	0.32	0.02	0.19	0.19
Crit Moves:					****			****		****		
Green/Cycle:	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.58	0.58	0.14	0.57	0.57
Volume/Cap:	0.27	0.27	0.27	0.54	0.54	0.54	0.33	0.54	0.54	0.14	0.33	0.33
Delay/Veh:	27.2	27.2	27.2	30.1	30.1	30.1	26.9	9.2	9.2	26.5	8.1	8.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.2	27.2	27.2	30.1	30.1	30.1	26.9	9.2	9.2	26.5	8.1	8.1
LOS by Move:	C	C	C	C	C	C	C	A	A	C	A	A
HCM2kAvgQ:	2	2	2	4	4	4	2	8	8	1	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1039: Whisman Road and SR 237 WB Ramps

Signal=Protect/Rights=Ignore
Final Vol: 0 187*** 98
Lanes: 1 0 1 0 1

West side				Center		East side		
Final Vol:	Lanes:	Signal=Split Rights=Ignore				Signal=Split Rights=Overlap	Lanes:	Final Vol:
362	1			Vol Cnt Date:	01/00/1900		0	254
	1			Cycle Time (sec):	100		0	
17***	0			Loss Time (sec):	12		1!	8
	0			Critical V/C:	0.574		0	
0	1			Avg Crit Del (sec/veh):	36.4		0	38***
				Avg Delay (sec/veh):	33.8			
				LOS:	C-			

Lanes: 1 0 1 1 0
Final Vol: 225*** 124 205
Signal=Protect/Rights=Include

Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	225	124	205	98	187	330	362	17	58	38	8	254
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	124	205	98	187	330	362	17	58	38	8	254
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	124	205	98	187	330	362	17	58	38	8	254
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	225	124	205	98	187	0	362	17	0	38	8	254
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	124	205	98	187	0	362	17	0	38	8	254
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	225	124	205	98	187	0	362	17	0	38	8	254
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.93	0.95	0.92	0.92	0.92	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.91	0.09	1.00	0.13	0.02	0.85
Final Sat.:	1750	1900	1750	1750	1900	1750	3391	159	1750	222	47	1482
Capacity Analysis Module:												
Vol/Sat:	0.13	0.07	0.12	0.06	0.10	0.00	0.11	0.11	0.00	0.17	0.17	0.17
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.20	0.20	0.20	0.17	0.00	0.19	0.19	0.00	0.30	0.30	0.50
Volume/Cap:	0.57	0.33	0.59	0.28	0.57	0.00	0.57	0.57	0.00	0.57	0.57	0.35
Delay/Veh:	36.6	34.6	38.2	34.5	40.6	0.0	38.3	38.3	0.0	31.2	31.2	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	34.6	38.2	34.5	40.6	0.0	38.3	38.3	0.0	31.2	31.2	15.5
LOS by Move:	D+	C-	D+	C-	D	A	D+	D+	A	C	C	B
HCM2kAvgQ:	7	3	7	3	6	0	6	6	0	9	9	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1039: Whisman Road and SR 237 WB Ramps

Signal=Protect/Rights=Ignore
Final Vol: 0 306 432***
Lanes: 1 0 1 0 1

Signal=Split
Rights=Ignore
Final Vol: Lanes:
281 1
0
15*** 1!
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 12
Critical V/C: 0.770
Avg Crit Del (sec/veh): 43.3
Avg Delay (sec/veh): 35.3
LOS: D+

Signal=Split
Rights=Overlap
Lanes: Final Vol:
0 162
0
1! 12***
0
0 38

Lanes: 1 0 1 1 0
Final Vol: 267 36 387***
Signal=Protect/Rights=Include

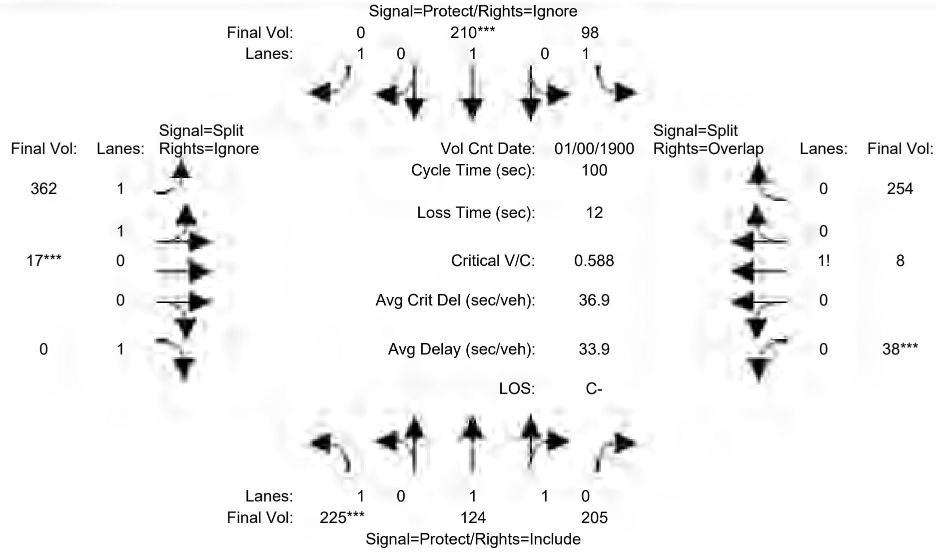
Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	267	36	387	432	306	697	281	15	37	38	12	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	36	387	432	306	697	281	15	37	38	12	162
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	36	387	432	306	697	281	15	37	38	12	162
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	267	36	387	432	306	0	281	15	0	38	12	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	36	387	432	306	0	281	15	0	38	12	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	267	36	387	432	306	0	281	15	0	38	12	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.90	0.10	0.00	0.18	0.06	0.76
Final Sat.:	1750	1900	1750	1750	1900	1750	3331	169	0	314	99	1337
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.22	0.25	0.16	0.00	0.08	0.09	0.00	0.12	0.12	0.12
Crit Moves:			****	****				****			****	
Green/Cycle:	0.29	0.29	0.29	0.32	0.31	0.00	0.12	0.12	0.00	0.16	0.16	0.47
Volume/Cap:	0.52	0.07	0.78	0.78	0.52	0.00	0.70	0.74	0.00	0.78	0.78	0.26
Delay/Veh:	30.4	26.0	39.7	37.6	29.2	0.0	47.6	49.7	0.0	53.5	53.5	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	26.0	39.7	37.6	29.2	0.0	47.6	49.7	0.0	53.5	53.5	12.8
LOS by Move:	C	C	D	D+	C	A	D	D	A	D-	D-	B
HCM2kAvgQ:	8	1	14	15	8	0	6	7	0	9	9	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP AM

Intersection #1039: Whisman Road and SR 237 WB Ramps




```
Street Name:          SR 237 WB Ramps                     Whishmand Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    12   12    12    12   12    12     8   12    12     8   12    12
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM
Base Vol:     225  124   205    98  187   330   362   17    58    38    8   254
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  225  124   205    98  187   330   362   17    58    38    8   254
Added Vol:      0    0     0     0   23     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  225  124   205    98  210   330   362   17    58    38    8   254
User Adj:    1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   225  124   205    98  210     0   362   17     0    38    8   254
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  225  124   205    98  210     0   362   17     0    38    8   254
PCE Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  0.00  1.00 1.00  1.00
FinalVolume:  225  124   205    98  210     0   362   17     0    38    8   254
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.92  0.92 1.00  0.92  0.93 0.95  0.92  0.92 0.92  0.92
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.91 0.09  1.00  0.13 0.02  0.85
Final Sat.:  1750 1900  1750  1750 1900  1750  3391  159  1750   222   47  1482
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.07  0.12  0.06 0.11  0.00  0.11 0.11  0.00  0.17 0.17  0.17
Crit Moves:  ****                   ****              ****        ****
Green/Cycle: 0.22 0.20  0.20  0.20 0.19  0.00  0.18 0.18  0.00  0.29 0.29  0.50
Volume/Cap:  0.59 0.32  0.58  0.28 0.59  0.00  0.59 0.59  0.00  0.59 0.59  0.35
Delay/Veh:   37.4 34.1  37.4  34.0 39.6   0.0  38.9 38.9   0.0  32.1 32.1  15.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  37.4 34.1  37.4  34.0 39.6   0.0  38.9 38.9   0.0  32.1 32.1  15.6
LOS by Move:   D+   C-    D+    C-    D     A    D+   D+     A    C-   C-     B
HCM2kAvgQ:      7    3     7     3    7     0     6    6     0     9    9     6
Note: Queue reported is the number of cars per lane.
```


Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PP PM

Intersection #1039: Whisman Road and SR 237 WB Ramps

Signal=Protect/Rights=Ignore
Final Vol: 0 324 432***
Lanes: 1 0 1 0 1

Signal=Split Rights=Ignore
Final Vol: 281 / 15*** / 0
Lanes: 1 / 0 / 1! / 0 / 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 12
Critical V/C: 0.770
Avg Crit Del (sec/veh): 43.3
Avg Delay (sec/veh): 35.4
LOS: D+

Signal=Split Rights=Overlap
Lanes: 0 / 0 / 1! / 0 / 0
Final Vol: 162 / 12*** / 38

Lanes: 1 0 1 1 0
Final Vol: 267 36 387***
Signal=Protect/Rights=Include

Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	267	36	387	432	306	697	281	15	37	38	12	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	36	387	432	306	697	281	15	37	38	12	162
Added Vol:	0	0	0	0	18	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	36	387	432	324	697	281	15	37	38	12	162
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	267	36	387	432	324	0	281	15	0	38	12	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	36	387	432	324	0	281	15	0	38	12	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	267	36	387	432	324	0	281	15	0	38	12	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.90	0.10	0.00	0.18	0.06	0.76
Final Sat.:	1750	1900	1750	1750	1900	1750	3331	169	0	314	99	1337
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.22	0.25	0.17	0.00	0.08	0.09	0.00	0.12	0.12	0.12
Crit Moves:			****	****				****			****	
Green/Cycle:	0.29	0.29	0.29	0.32	0.32	0.00	0.12	0.12	0.00	0.16	0.16	0.47
Volume/Cap:	0.54	0.07	0.78	0.78	0.54	0.00	0.70	0.74	0.00	0.78	0.78	0.26
Delay/Veh:	31.3	26.0	39.7	37.6	28.9	0.0	47.6	49.7	0.0	53.5	53.5	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.3	26.0	39.7	37.6	28.9	0.0	47.6	49.7	0.0	53.5	53.5	12.8
LOS by Move:	C	C	D	D+	C	A	D	D	A	D-	D-	B
HCM2kAvgQ:	8	1	14	15	9	0	6	7	0	9	9	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background AM

Intersection #1: Ellis Street and Manila Drive

```
                         Signal=Stop/Rights=Include
          Final Vol:       0          59          1***
              Lanes:       0     0     1     1     0

          Signal=Stop                                       Signal=Stop
Final Vol:  Lanes:  Rights=Include     Vol Cnt Date:  01/00/1900   Rights=Include   Lanes:   Final Vol:
                                    Cycle Time (sec):     100
   0          0                                                                   0        40
                                    Loss Time (sec):       0
              0                                                                   0
   0          0                        Critical V/C:     1.106                    1!        0
              0                   Avg Crit Del (sec/veh):  54.4                   0
   0          0                      Avg Delay (sec/veh):  54.4                   0       315***
                                                 LOS:       F

              Lanes:       0     0     2     0     1
          Final Vol:       0          217         800***
                         Signal=Stop/Rights=Include
```

```
Street Name:            Ellis Street                     Manila Drive
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM
Base Vol:       0  217   800     1   59     0     0    0     0   315    0    40
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  217   800     1   59     0     0    0     0   315    0    40
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  217   800     1   59     0     0    0     0   315    0    40
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  217   800     1   59     0     0    0     0   315    0    40
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  217   800     1   59     0     0    0     0   315    0    40
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  217   800     1   59     0     0    0     0   315    0    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 2.00  1.00  0.03 1.97  0.00  0.00 0.00  0.00  0.89 0.00  0.11
Final Sat.:     0 1267   724    17 1029     0     0    0     0   537    0    68
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx 0.17  1.11  0.06 0.06  xxxx  xxxx xxxx  xxxx  0.59 xxxx  0.59
Crit Moves:             ****  ****                                ****
Delay/Veh:    0.0  9.5  86.5   9.7  9.7   0.0   0.0  0.0   0.0  16.9  0.0  16.9
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.5  86.5   9.7  9.7   0.0   0.0  0.0   0.0  16.9  0.0  16.9
LOS by Move:    *    A     F     A    A     *     *    *     *     C    *     C
ApproachDel:       70.1              9.7            xxxxxx             16.9
Delay Adj:         1.00             1.00             xxxxx             1.00
ApprAdjDel:        70.1              9.7            xxxxxx             16.9
LOS by Appr:          F                A                 *                C
AllWayAvgQ:   0.0  0.2  15.9   0.1  0.1   0.0   0.0  0.0   0.0   1.3  1.3   1.3
Note: Queue reported is the number of cars per lane.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************

Intersection #1 Ellis Street and Manila Drive
********************************************************************************
```

```
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0  217   800     1   59     0     0    0     0   315    0    40
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            1077
Minor Approach Volume:          355
Minor Approach Volume Threshold: 259
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PM

Intersection #1: Ellis Street and Manila Drive

Signal=Stop/Rights=Include
Final Vol: 0 165 12***
Lanes: 0 0 1 1 0

Signal=Stop Rights=Include (West side) — Final Vol: 0, 0, 0; Lanes: 0, 0, 0, 0, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.874
Avg Crit Del (sec/veh): 23.4
Avg Delay (sec/veh): 23.4
LOS: C

Signal=Stop Rights=Include (East side) — Lanes: 0, 0, 1!, 0, 0; Final Vol: 5***, 0, 592

Lanes: 0 0 2 0 1
Final Vol: 0 39 211***
Signal=Stop/Rights=Include

Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Base Vol:	0	39	211	12	165	0	0	0	0	592	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	211	12	165	0	0	0	0	592	0	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	211	12	165	0	0	0	0	592	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	39	211	12	165	0	0	0	0	592	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	39	211	12	165	0	0	0	0	592	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	39	211	12	165	0	0	0	0	592	0	5

Saturation Flow Module:

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.14	1.86	0.00	0.00	0.00	0.00	0.99	0.00	0.01
Final Sat.:	0	1070	597	71	976	0	0	0	0	677	0	6

Capacity Analysis Module:

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Vol/Sat:	xxxx	0.04	0.35	0.17	0.17	xxxx	xxxx	xxxx	xxxx	0.87	xxxx	0.87
Crit Moves:			****	****								****
Delay/Veh:	0.0	9.3	11.3	10.5	10.5	0.0	0.0	0.0	0.0	32.4	0.0	32.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.3	11.3	10.5	10.5	0.0	0.0	0.0	0.0	32.4	0.0	32.4
LOS by Move:	*	A	B	B	B	*	*	*	*	D	*	D
ApproachDel:		11.0			10.5			xxxxxx			32.4	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		11.0			10.5			xxxxxx			32.4	
LOS by Appr:		B			B			*			D	
AllWayAvgQ:	0.0	0.0	0.5	0.2	0.2	0.0	0.0	0.0	0.0	4.6	4.6	4.6

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

****

```
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0   39   211    12  165     0     0    0     0   592    0     5
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             597
Minor Approach Volume:           250
Minor Approach Volume Threshold: 455
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PP AM

Intersection #1: Ellis Street and Manila Drive

Signal=Stop/Rights=Include
Final Vol: 0 67 1***
Lanes: 0 0 1 1 0

Signal=Stop Rights=Include (West) | Signal=Stop Rights=Include (East)

Final Vol:	Lanes:			Lanes:	Final Vol:
0	0			0	40***
	0			0	
0	0			1!	0
	0			0	
0	0			0	315

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 1.109
Avg Crit Del (sec/veh): 54.2
Avg Delay (sec/veh): 54.2
LOS: F

Lanes: 0 0 2 0 1
Final Vol: 0 239 800***
Signal=Stop/Rights=Include

Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	217	800	1	59	0	0	0	0	315	0	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	217	800	1	59	0	0	0	0	315	0	40
Added Vol:	0	22	0	0	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	239	800	1	67	0	0	0	0	315	0	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	239	800	1	67	0	0	0	0	315	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	239	800	1	67	0	0	0	0	315	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	239	800	1	67	0	0	0	0	315	0	40
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.03	1.97	0.00	0.00	0.00	0.00	0.89	0.00	0.11
Final Sat.:	0	1263	721	15	1028	0	0	0	0	536	0	68
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.19	1.11	0.07	0.07	xxxx	xxxx	xxxx	xxxx	0.59	xxxx	0.59
Crit Moves:			****	****								****
Delay/Veh:	0.0	9.7	87.8	9.8	9.8	0.0	0.0	0.0	0.0	17.0	0.0	17.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.7	87.8	9.8	9.8	0.0	0.0	0.0	0.0	17.0	0.0	17.0
LOS by Move:	*	A	F	A	A	*	*	*	*	C	*	C
ApproachDel:		69.8			9.8			xxxxxx			17.0	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		69.8			9.8			xxxxxx			17.0	
LOS by Appr:		F			A			*			C	
AllWayAvgQ:	0.0	0.2	16.1	0.1	0.1	0.0	0.0	0.0	0.0	1.4	1.4	1.4

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

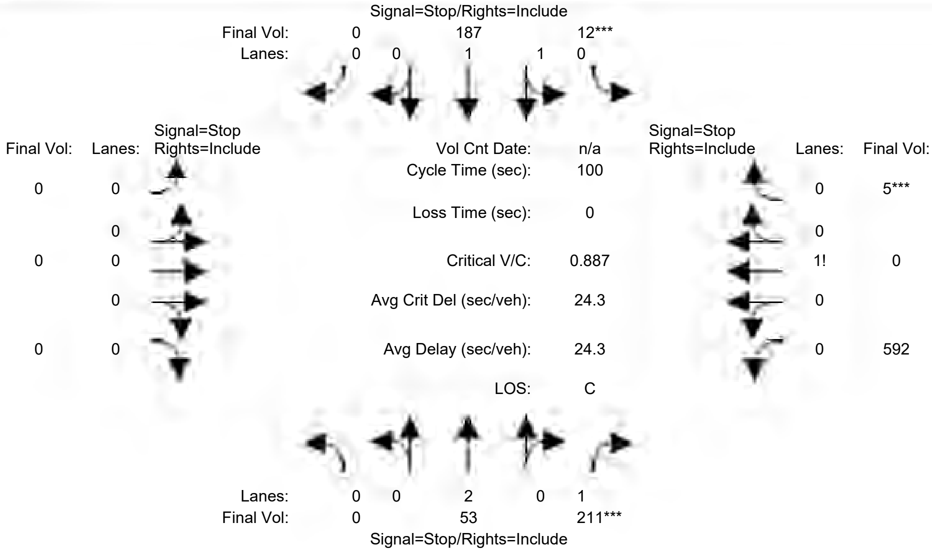
****


```
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0  239   800     1   67     0     0    0     0   315    0    40
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1107
Minor Approach Volume:           355
Minor Approach Volume Threshold: 250
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PP PM

Intersection #1: Ellis Street and Manila Drive



Street Name:	Ellis Street						Manila Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	39	211	12	165	0	0	0	0	592	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	211	12	165	0	0	0	0	592	0	5
Added Vol:	0	14	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	53	211	12	187	0	0	0	0	592	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	53	211	12	187	0	0	0	0	592	0	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	53	211	12	187	0	0	0	0	592	0	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	53	211	12	187	0	0	0	0	592	0	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.12	1.88	0.00	0.00	0.00	0.00	0.99	0.00	0.01
Final Sat.:	0	1064	593	63	981	0	0	0	0	667	0	6
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.36	0.19	0.19	xxxx	xxxx	xxxx	xxxx	0.89	xxxx	0.89
Crit Moves:			****	****								****
Delay/Veh:	0.0	9.5	11.4	10.8	10.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.5	11.4	10.8	10.7	0.0	0.0	0.0	0.0	34.6	0.0	34.6
LOS by Move:	*	A	B	B	B	*	*	*	*	D	*	D
ApproachDel:		11.0			10.7			xxxxxx			34.6	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		11.0			10.7			xxxxxx			34.6	
LOS by Appr:		B			B			*			D	
AllWayAvgQ:	0.0	0.0	0.5	0.2	0.2	0.0	0.0	0.0	0.0	4.9	4.9	4.9

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Ellis Street and Manila Drive

****

```
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  2  0  1    0  1  1  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0   53   211    12  187     0     0    0     0   592    0     5
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             597
Minor Approach Volume:           264
Minor Approach Volume Threshold: 455
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 232*** 139 0
Lanes: 0 1 1 0 0

Signal=Split Rights=Include (westbound side: Signal=Split Rights=Include)

Final Vol:	Lanes:			Lanes:	Final Vol:
0	0			2	101
	0			0	
0	0			0	0
	0			1	
0	0			0	243***

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.632
Avg Crit Del (sec/veh): 20.3
Avg Delay (sec/veh): 15.1
LOS: B

Lanes: 0 1 1 0 0
Final Vol: 156*** 891 0
Signal=Protect/Rights=Include

Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	156	891	0	0	139	232	0	0	0	243	0	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	891	0	0	139	232	0	0	0	243	0	101
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	156	891	0	0	139	232	0	0	0	243	0	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	891	0	0	139	232	0	0	0	243	0	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	891	0	0	139	232	0	0	0	243	0	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	891	0	0	139	232	0	0	0	243	0	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.83
Lanes:	0.32	1.68	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	559	3193	0	0	1900	1750	0	0	0	1750	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.00	0.00	0.07	0.13	0.00	0.00	0.00	0.14	0.00	0.03
Crit Moves:	****					****				****		
Green/Cycle:	0.44	0.65	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.22	0.00	0.22
Volume/Cap:	0.63	0.43	0.00	0.00	0.35	0.63	0.00	0.00	0.00	0.63	0.00	0.15
Delay/Veh:	15.9	6.0	0.0	0.0	23.8	27.4	0.0	0.0	0.0	28.1	0.0	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	6.0	0.0	0.0	23.8	27.4	0.0	0.0	0.0	28.1	0.0	22.1
LOS by Move:	B	A	A	A	C	C	A	A	A	C	A	C+
HCM2kAvgQ:	9	5	0	0	3	6	0	0	0	6	0	1

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 328 424*** 0
Lanes: 0 1 1 0 0

Signal=Split Rights=Include (West side) — Final Vol: 0, 0, 0; Lanes: 0, 0, 0, 0, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.638
Avg Crit Del (sec/veh): 21.7
Avg Delay (sec/veh): 19.6
LOS: B-

Signal=Split Rights=Include (East side) — Lanes: 2, 0, 0, 1, 0; Final Vol: 29, 0, 190***

Lanes: 0 1 1 0 0
Final Vol: 432*** 220 0
Signal=Protect/Rights=Include

Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	432	220	0	0	424	328	0	0	0	190	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	432	220	0	0	424	328	0	0	0	190	0	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	432	220	0	0	424	328	0	0	0	190	0	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	432	220	0	0	424	328	0	0	0	190	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	432	220	0	0	424	328	0	0	0	190	0	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	432	220	0	0	424	328	0	0	0	190	0	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	1.00	1.00	0.00	0.00	1.10	0.90	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	1750	1900	0	0	2085	1613	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.25	0.12	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.11	0.00	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.39	0.71	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.17	0.00	0.17
Volume/Cap:	0.64	0.16	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.64	0.00	0.06
Delay/Veh:	18.8	3.4	0.0	0.0	21.6	21.6	0.0	0.0	0.0	31.8	0.0	24.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.8	3.4	0.0	0.0	21.6	21.6	0.0	0.0	0.0	31.8	0.0	24.6
LOS by Move:	B-	A	A	A	C+	C+	A	A	A	C	A	C
HCM2kAvgQ:	8	2	0	0	8	8	0	0	0	5	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 232*** 147 0
Lanes: 0 1 1 0 0

Signal=Split
Rights=Include

Final Vol:	Lanes:				Lanes:	Final Vol:
0	0	Vol Cnt Date:	01/00/1900	Signal=Split Rights=Include	2	101
	0	Cycle Time (sec):	70		0	
0	0	Loss Time (sec):	9		0	0
	0	Critical V/C:	0.736		1	
0	0	Avg Crit Del (sec/veh):	23.0		0	322***
		Avg Delay (sec/veh):	17.7			
		LOS:	B			

Lanes: 0 1 1 0 0
Final Vol: 296*** 913 0
Signal=Protect/Rights=Include

Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	156	891	0	0	139	232	0	0	0	243	0	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	891	0	0	139	232	0	0	0	243	0	101
Added Vol:	140	22	0	0	8	0	0	0	0	79	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	296	913	0	0	147	232	0	0	0	322	0	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	296	913	0	0	147	232	0	0	0	322	0	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	296	913	0	0	147	232	0	0	0	322	0	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	296	913	0	0	147	232	0	0	0	322	0	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.83
Lanes:	0.52	1.48	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	911	2811	0	0	1900	1750	0	0	0	1750	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.00	0.00	0.08	0.13	0.00	0.00	0.00	0.18	0.00	0.03
Crit Moves:	****					****				****		
Green/Cycle:	0.44	0.62	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.74	0.52	0.00	0.00	0.43	0.74	0.00	0.00	0.00	0.74	0.00	0.13
Delay/Veh:	18.0	7.6	0.0	0.0	25.8	32.6	0.0	0.0	0.0	30.6	0.0	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.0	7.6	0.0	0.0	25.8	32.6	0.0	0.0	0.0	30.6	0.0	20.4
LOS by Move:	B	A	A	A	C	C-	A	A	A	C	A	C+
HCM2kAvgQ:	11	7	0	0	3	7	0	0	0	9	0	1

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #2: Ellis Street and US-101 North Ramps

Signal=Protect/Rights=Include
Final Vol: 328 446*** 0
Lanes: 0 1 1 0 0

Westbound approach: Signal=Split, Rights=Include; Lanes: 2, 0, 0, 1, 0; Final Vol: 29, 0, 242***

Eastbound approach: Signal=Split, Rights=Include; Lanes: 0, 0, 0, 0, 0; Final Vol: 0, 0, 0

Vol Cnt Date: n/a
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.756
Avg Crit Del (sec/veh): 25.4
Avg Delay (sec/veh): 23.2
LOS: C

Lanes: 0 1 1 0 0
Final Vol: 542*** 234 0
Signal=Protect/Rights=Include

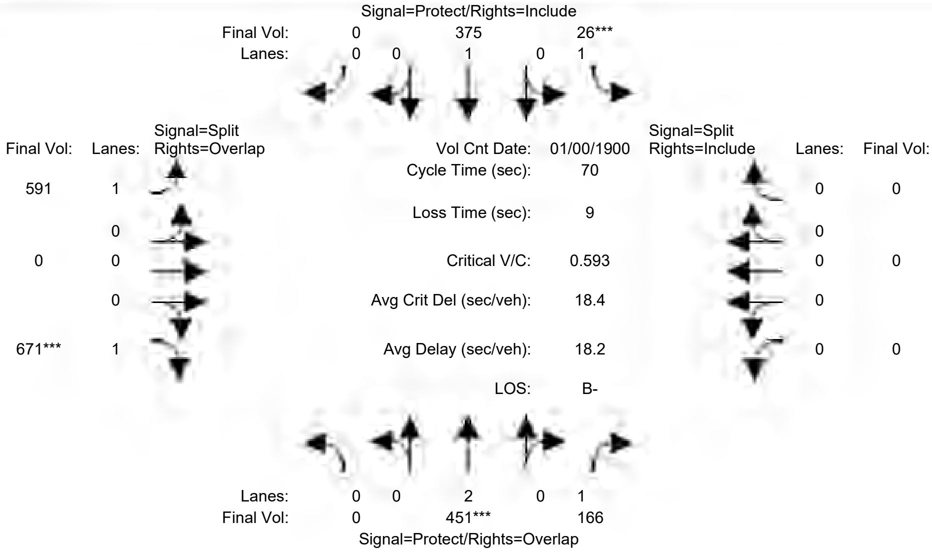
Street Name:	Ellis Street						US-101 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	432	220	0	0	424	328	0	0	0	190	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	432	220	0	0	424	328	0	0	0	190	0	29
Added Vol:	110	14	0	0	22	0	0	0	0	52	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	542	234	0	0	446	328	0	0	0	242	0	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	542	234	0	0	446	328	0	0	0	242	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	542	234	0	0	446	328	0	0	0	242	0	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	542	234	0	0	446	328	0	0	0	242	0	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.83
Lanes:	1.00	1.00	0.00	0.00	1.11	0.89	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	1750	1900	0	0	2113	1554	0	0	0	1750	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.31	0.12	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.14	0.00	0.01
Crit Moves:	****				****					****		
Green/Cycle:	0.41	0.69	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.18	0.00	0.18
Volume/Cap:	0.76	0.18	0.00	0.00	0.76	0.76	0.00	0.00	0.00	0.76	0.00	0.05
Delay/Veh:	21.0	3.9	0.0	0.0	26.3	26.3	0.0	0.0	0.0	37.0	0.0	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.0	3.9	0.0	0.0	26.3	26.3	0.0	0.0	0.0	37.0	0.0	23.6
LOS by Move:	C+	A	A	A	C	C	A	A	A	D+	A	C
HCM2kAvgQ:	11	2	0	0	10	10	0	0	0	7	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3: Ellis Street and US-101 South Ramps



Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	451	166	26	375	0	591	0	671	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	451	166	26	375	0	591	0	671	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	451	166	26	375	0	591	0	671	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	451	166	26	375	0	591	0	671	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	451	166	26	375	0	591	0	671	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	451	166	26	375	0	591	0	671	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.09	0.01	0.20	0.00	0.34	0.00	0.38	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.18	0.18	0.10	0.28	0.00	0.59	0.00	0.59	0.00	0.00	0.00
Volume/Cap:	0.00	0.65	0.52	0.15	0.70	0.00	0.57	0.00	0.65	0.00	0.00	0.00
Delay/Veh:	0.0	28.8	27.4	29.2	26.5	0.0	9.7	0.0	11.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.8	27.4	29.2	26.5	0.0	9.7	0.0	11.1	0.0	0.0	0.0
LOS by Move:	A	C	C	C	C	A	A	A	B+	A	A	A
HCM2kAvgQ:	0	5	3	1	7	0	9	0	11	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3: Ellis Street and US-101 South Ramps

Signal=Protect/Rights=Include
Final Vol: 0 518 90***
Lanes: 0 0 1 0 1

Signal=Split Rights=Overlap (westbound approach side)
Final Vol: 148, 0, 299***
Lanes: 1, 0, 0, 0, 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.468
Avg Crit Del (sec/veh): 18.6
Avg Delay (sec/veh): 15.6
LOS: B

Signal=Split Rights=Include
Lanes: 0, 0, 0, 0, 0
Final Vol: 0, 0, 0

Lanes: 0 0 2 0 1
Final Vol: 0 479 324***
Signal=Protect/Rights=Overlap

Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	479	324	90	518	0	148	0	299	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	479	324	90	518	0	148	0	299	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	479	324	90	518	0	148	0	299	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	479	324	90	518	0	148	0	299	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	479	324	90	518	0	148	0	299	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	479	324	90	518	0	148	0	299	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.19	0.05	0.27	0.00	0.08	0.00	0.17	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green/Cycle:	0.00	0.40	0.40	0.11	0.51	0.00	0.37	0.00	0.37	0.00	0.00	0.00
Volume/Cap:	0.00	0.32	0.47	0.47	0.54	0.00	0.23	0.00	0.47	0.00	0.00	0.00
Delay/Veh:	0.0	14.7	16.2	31.0	12.4	0.0	15.6	0.0	17.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.7	16.2	31.0	12.4	0.0	15.6	0.0	17.5	0.0	0.0	0.0
LOS by Move:	A	B	B	C	B	A	B	A	B	A	A	A
HCM2kAvgQ:	0	3	5	2	7	0	2	0	6	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #3: Ellis Street and US-101 South Ramps

Signal=Protect/Rights=Include
Final Vol: 0 461 26***
Lanes: 0 0 1 0 1

Signal=Split
Rights=Overlap

Final Vol: Lanes:
591 1
0
0 0
0
763*** 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.703
Avg Crit Del (sec/veh): 22.7
Avg Delay (sec/veh): 21.7
LOS: C+

Signal=Split
Rights=Include

Lanes: Final Vol:
0 0
0
0 0
0
0 0

Lanes: 0 0 2 0 1
Final Vol: 0 614*** 225
Signal=Protect/Rights=Overlap

Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	451	166	26	375	0	591	0	671	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	451	166	26	375	0	591	0	671	0	0	0
Added Vol:	0	163	59	0	86	0	0	0	92	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	614	225	26	461	0	591	0	763	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	614	225	26	461	0	591	0	763	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	614	225	26	461	0	591	0	763	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	614	225	26	461	0	591	0	763	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.13	0.01	0.24	0.00	0.34	0.00	0.44	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.21	0.21	0.10	0.31	0.00	0.56	0.00	0.56	0.00	0.00	0.00
Volume/Cap:	0.00	0.77	0.62	0.15	0.79	0.00	0.60	0.00	0.77	0.00	0.00	0.00
Delay/Veh:	0.0	30.9	28.3	29.2	29.1	0.0	11.1	0.0	15.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.9	28.3	29.2	29.1	0.0	11.1	0.0	15.8	0.0	0.0	0.0
LOS by Move:	A	C	C	C	C	A	B+	A	B	A	A	A
HCM2kAvgQ:	0	6	5	1	10	0	10	0	16	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #3: Ellis Street and US-101 South Ramps

Signal=Protect/Rights=Include
Final Vol: 0 592 90***
Lanes: 0 0 1 0 1

Westbound approach (left): Signal=Split, Rights=Overlap
Final Vol: 148 / Lanes: 1
Lanes: 0
Final Vol: 0 / Lanes: 0
Lanes: 0
Final Vol: 436*** / Lanes: 1

Vol Cnt Date: n/a
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.620
Avg Crit Del (sec/veh): 20.7
Avg Delay (sec/veh): 17.8
LOS: B

Eastbound approach (right): Signal=Split, Rights=Include
Lanes: 0 / Final Vol: 0
Lanes: 0
Lanes: 0 / Final Vol: 0
Lanes: 0
Lanes: 0 / Final Vol: 0

Lanes: 0 0 2 0 1
Final Vol: 0 603 420***
Signal=Protect/Rights=Overlap

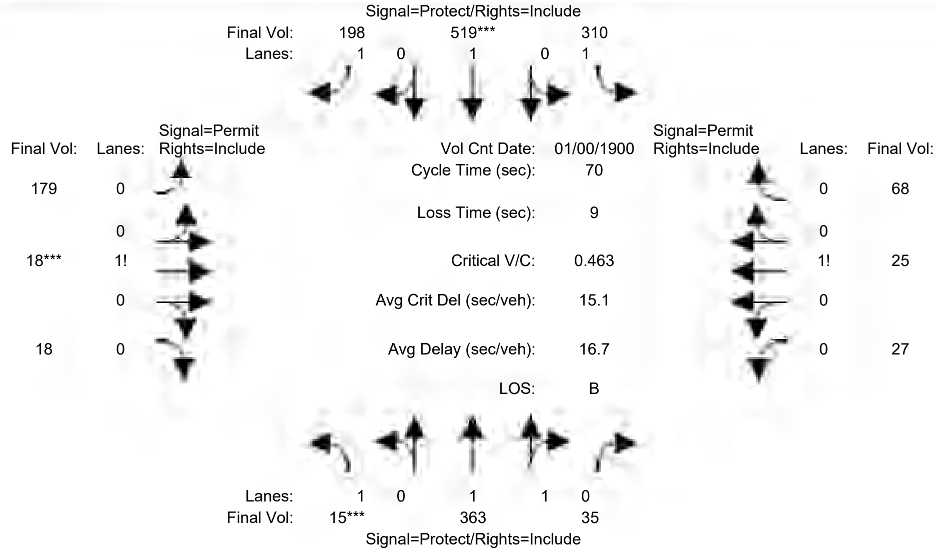
Street Name:	Ellis Street						101 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	479	324	90	518	0	148	0	299	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	479	324	90	518	0	148	0	299	0	0	0
Added Vol:	0	124	96	0	74	0	0	0	137	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	603	420	90	592	0	148	0	436	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	603	420	90	592	0	148	0	436	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	603	420	90	592	0	148	0	436	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	603	420	90	592	0	148	0	436	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	1750	1900	0	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.24	0.05	0.31	0.00	0.08	0.00	0.25	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green/Cycle:	0.00	0.38	0.38	0.10	0.48	0.00	0.39	0.00	0.39	0.00	0.00	0.00
Volume/Cap:	0.00	0.42	0.63	0.51	0.65	0.00	0.22	0.00	0.63	0.00	0.00	0.00
Delay/Veh:	0.0	16.3	19.8	32.5	15.5	0.0	14.2	0.0	19.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.3	19.8	32.5	15.5	0.0	14.2	0.0	19.1	0.0	0.0	0.0
LOS by Move:	A	B	B-	C-	B	A	B	A	B-	A	A	A
HCM2kAvgQ:	0	5	8	2	9	0	2	0	9	0	0	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #4: Ellis Street and Fairchild Drive



Street Name:		Ellis Street						Fairchild Drive				
Approach:		North Bound			South Bound			East Bound			West Bound	
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	15	363	35	310	519	198	179	18	18	27	25	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	363	35	310	519	198	179	18	18	27	25	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	363	35	310	519	198	179	18	18	27	25	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	15	363	35	310	519	198	179	18	18	27	25	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	363	35	310	519	198	179	18	18	27	25	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	363	35	310	519	198	179	18	18	27	25	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.81	0.19	1.00	1.00	1.00	0.84	0.08	0.08	0.23	0.19	0.58
Final Sat.:	1750	3440	332	1750	1900	1750	1467	147	147	400	371	1008
Capacity Analysis Module:												
Vol/Sat:	0.01	0.11	0.11	0.18	0.27	0.11	0.12	0.12	0.12	0.07	0.07	0.07
Crit Moves:	****				****			****				
Green/Cycle:	0.10	0.28	0.28	0.35	0.53	0.53	0.24	0.24	0.24	0.24	0.24	0.24
Volume/Cap:	0.09	0.37	0.37	0.51	0.51	0.21	0.51	0.51	0.51	0.28	0.28	0.28
Delay/Veh:	28.8	20.4	20.4	18.6	10.9	8.7	24.2	24.2	24.2	22.1	22.1	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.8	20.4	20.4	18.6	10.9	8.7	24.2	24.2	24.2	22.1	22.1	22.1
LOS by Move:	C	C+	C+	B-	B+	A	C	C	C	C+	C+	C+
HCM2kAvgQ:	0	4	4	5	7	2	5	5	5	2	2	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #4: Ellis Street and Fairchild Drive

Signal=Protect/Rights=Include
Final Vol: 259 451*** 103
Lanes: 1 0 1 0 1

Final Vol:	Lanes:	Signal=Permit Rights=Include			Signal=Permit Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
200	0		Cycle Time (sec):	70		0	272
	0		Loss Time (sec):	9		0	
9	1!		Critical V/C:	0.492		1!	26***
	0		Avg Crit Del (sec/veh):	17.5		0	
15	0		Avg Delay (sec/veh):	17.6		0	25
			LOS:	B			

Lanes: 1 0 1 1 0
Final Vol: 12*** 380 23
Signal=Protect/Rights=Include

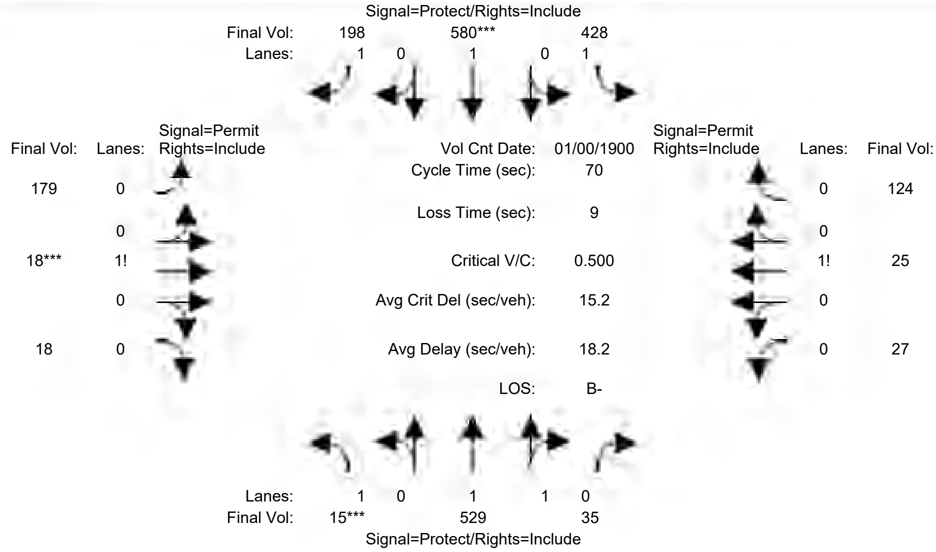
Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	12	380	23	103	451	259	200	9	15	25	26	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	380	23	103	451	259	200	9	15	25	26	272
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	380	23	103	451	259	200	9	15	25	26	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	380	23	103	451	259	200	9	15	25	26	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	380	23	103	451	259	200	9	15	25	26	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	380	23	103	451	259	200	9	15	25	26	272
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.88	0.12	1.00	1.00	1.00	0.89	0.04	0.07	0.08	0.08	0.84
Final Sat.:	1750	3489	211	1750	1900	1750	1563	70	117	135	141	1474
Capacity Analysis Module:												
Vol/Sat:	0.01	0.11	0.11	0.06	0.24	0.15	0.13	0.13	0.13	0.18	0.18	0.18
Crit Moves:	****				****						****	
Green/Cycle:	0.10	0.31	0.31	0.22	0.43	0.43	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.07	0.35	0.35	0.27	0.55	0.34	0.38	0.38	0.38	0.55	0.55	0.55
Delay/Veh:	28.7	18.7	18.7	23.0	15.5	13.4	18.0	18.0	18.0	19.9	19.9	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	18.7	18.7	23.0	15.5	13.4	18.0	18.0	18.0	19.9	19.9	19.9
LOS by Move:	C	B-	B-	C	B	B	B-	B-	B-	B-	B-	B-
HCM2kAvgQ:	0	4	4	2	7	4	4	4	4	7	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #4: Ellis Street and Fairchild Drive



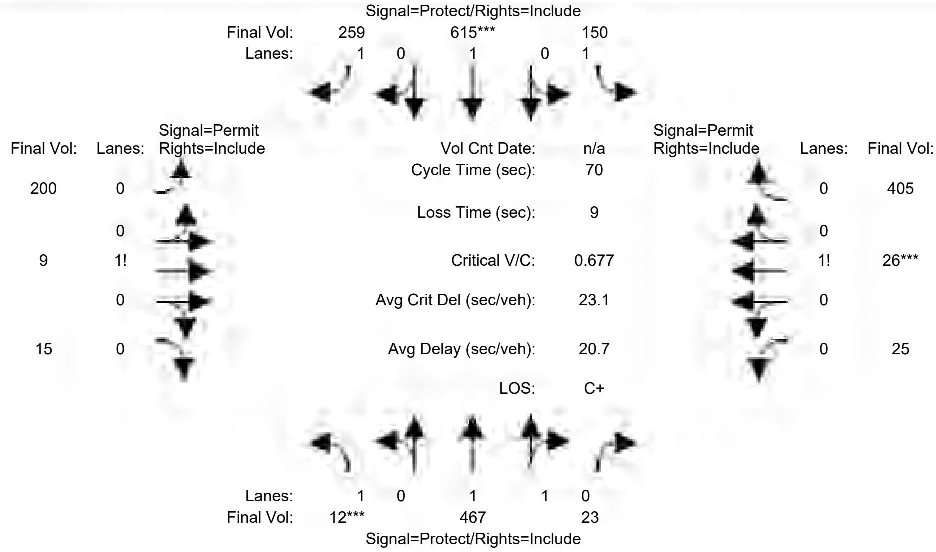
Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	15	363	35	310	519	198	179	18	18	27	25	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	363	35	310	519	198	179	18	18	27	25	68
Added Vol:	0	166	0	118	61	0	0	0	0	0	0	56
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	529	35	428	580	198	179	18	18	27	25	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	15	529	35	428	580	198	179	18	18	27	25	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	529	35	428	580	198	179	18	18	27	25	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	529	35	428	580	198	179	18	18	27	25	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.87	0.13	1.00	1.00	1.00	0.84	0.08	0.08	0.16	0.13	0.71
Final Sat.:	1750	3545	235	1750	1900	1750	1467	147	147	272	251	1247
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.24	0.31	0.11	0.12	0.12	0.12	0.10	0.10	0.10
Crit Moves:	****				****			****				
Green/Cycle:	0.10	0.25	0.25	0.40	0.55	0.55	0.22	0.22	0.22	0.22	0.22	0.22
Volume/Cap:	0.09	0.60	0.60	0.60	0.55	0.21	0.55	0.55	0.55	0.45	0.45	0.45
Delay/Veh:	28.8	24.5	24.5	17.9	10.8	8.1	26.0	26.0	26.0	24.5	24.5	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.8	24.5	24.5	17.9	10.8	8.1	26.0	26.0	26.0	24.5	24.5	24.5
LOS by Move:	C	C	C	B	B+	A	C	C	C	C	C	C
HCM2kAvgQ:	0	6	6	8	8	2	5	5	5	4	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #4: Ellis Street and Fairchild Drive



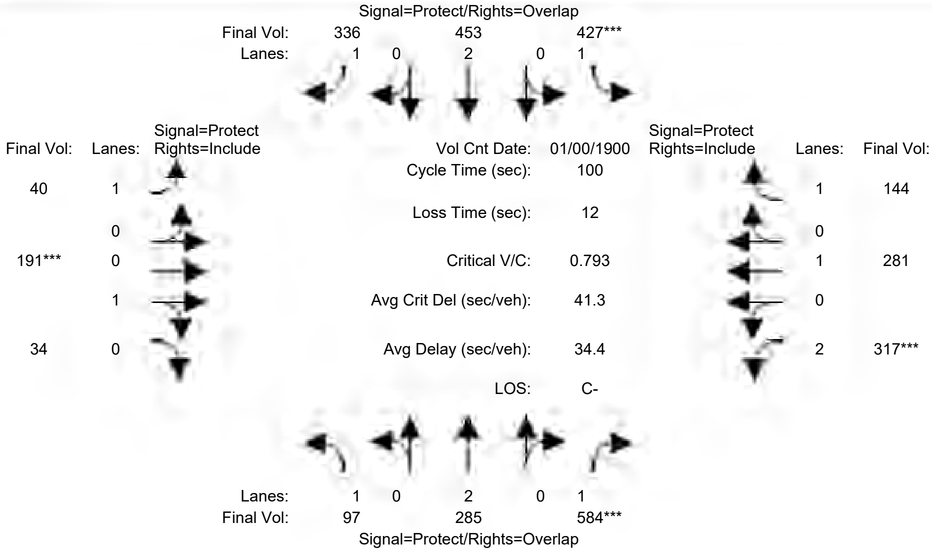
Street Name:	Ellis Street						Fairchild Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	12	380	23	103	451	259	200	9	15	25	26	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	380	23	103	451	259	200	9	15	25	26	272
Added Vol:	0	87	0	47	164	0	0	0	0	0	0	133
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	467	23	150	615	259	200	9	15	25	26	405
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	467	23	150	615	259	200	9	15	25	26	405
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	467	23	150	615	259	200	9	15	25	26	405
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	467	23	150	615	259	200	9	15	25	26	405
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.90	0.10	1.00	1.00	1.00	0.89	0.04	0.07	0.06	0.05	0.89
Final Sat.:	1750	3607	178	1750	1900	1750	1567	71	118	96	100	1561
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.09	0.32	0.15	0.13	0.13	0.13	0.26	0.26	0.26
Crit Moves:	****				****						****	
Green/Cycle:	0.10	0.31	0.31	0.22	0.43	0.43	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.07	0.42	0.42	0.39	0.76	0.35	0.37	0.37	0.37	0.76	0.76	0.76
Delay/Veh:	28.7	19.3	19.3	24.1	21.0	13.7	17.7	17.7	17.7	25.8	25.8	25.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	19.3	19.3	24.1	21.0	13.7	17.7	17.7	17.7	25.8	25.8	25.8
LOS by Move:	C	B-	B-	C	C+	B	B	B	B	C	C	C
HCM2kAvgQ:	0	4	4	3	11	4	4	4	4	11	11	11

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #5: Maude Avenue and SR 237 Ramps



Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	97	285	584	427	453	336	40	191	34	317	281	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	285	584	427	453	336	40	191	34	317	281	144
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	285	584	427	453	336	40	191	34	317	281	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	285	584	427	453	336	40	191	34	317	281	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	285	584	427	453	336	40	191	34	317	281	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	285	584	427	453	336	40	191	34	317	281	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.84	0.16	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1592	283	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.33	0.24	0.12	0.19	0.02	0.12	0.12	0.10	0.15	0.08
Crit Moves:			****	****				****		****		
Green/Cycle:	0.18	0.29	0.42	0.31	0.43	0.52	0.09	0.15	0.15	0.13	0.19	0.19
Volume/Cap:	0.31	0.26	0.79	0.79	0.28	0.37	0.26	0.79	0.79	0.79	0.78	0.44
Delay/Veh:	36.5	27.1	31.1	39.6	18.8	14.8	43.3	55.0	55.0	52.8	49.3	36.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.5	27.1	31.1	39.6	18.8	14.8	43.3	55.0	55.0	52.8	49.3	36.8
LOS by Move:	D+	C	C	D	B-	B	D	E+	E+	D-	D	D+
HCM2kAvgQ:	3	3	19	15	4	7	1	9	9	6	9	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #5: Maude Avenue and SR 237 Ramps

Signal=Protect/Rights=Overlap
Final Vol: 70 355 129***
Lanes: 1 0 2 0 1

Signal=Protect
Rights=Include

Final Vol:	Lanes:
76	1
	0
305***	0
	1
138	0

Vol Cnt Date:	01/00/1900
Cycle Time (sec):	110
Loss Time (sec):	12
Critical V/C:	0.624
Avg Crit Del (sec/veh):	38.1
Avg Delay (sec/veh):	34.5
LOS:	C-

Signal=Protect
Rights=Include

Lanes:	Final Vol:
1	314
0	
1	163
0	
2	522***

Lanes: 1 0 2 0 1
Final Vol: 37 268*** 393
Signal=Protect/Rights=Overlap

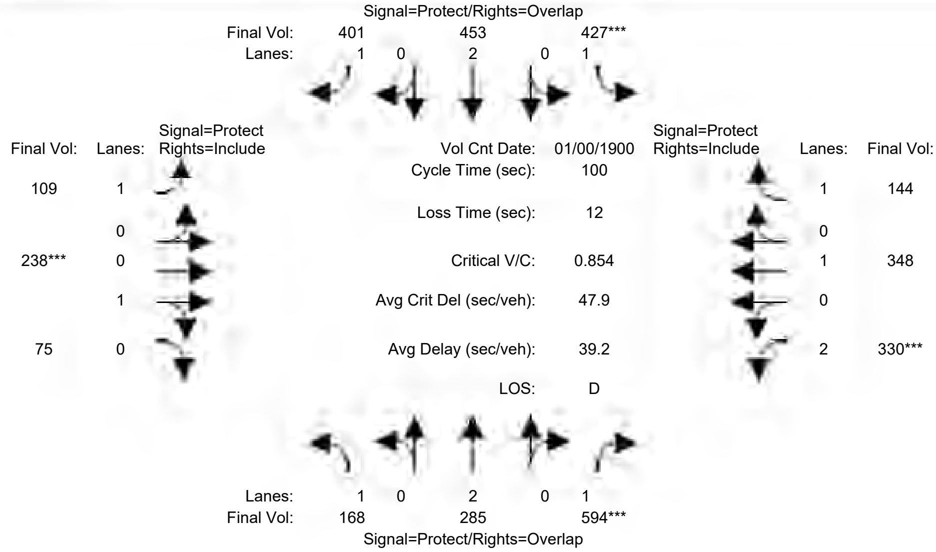
Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	37	268	393	129	355	70	76	305	138	522	163	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	268	393	129	355	70	76	305	138	522	163	314
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	268	393	129	355	70	76	305	138	522	163	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	268	393	129	355	70	76	305	138	522	163	314
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	268	393	129	355	70	76	305	138	522	163	314
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	268	393	129	355	70	76	305	138	522	163	314
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.69	0.31	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1239	561	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.07	0.22	0.07	0.09	0.04	0.04	0.25	0.25	0.17	0.09	0.18
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.11	0.38	0.12	0.14	0.31	0.17	0.39	0.39	0.27	0.49	0.49
Volume/Cap:	0.23	0.62	0.59	0.62	0.68	0.13	0.25	0.62	0.62	0.62	0.18	0.37
Delay/Veh:	46.9	49.4	28.9	52.0	48.8	27.4	39.8	28.5	28.5	37.0	15.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.9	49.4	28.9	52.0	48.8	27.4	39.8	28.5	28.5	37.0	15.9	17.9
LOS by Move:	D	D	C	D-	D	C	D	C	C	D+	B	B
HCM2kAvgQ:	1	5	12	6	7	2	3	13	13	9	3	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #5: Maude Avenue and SR 237 Ramps



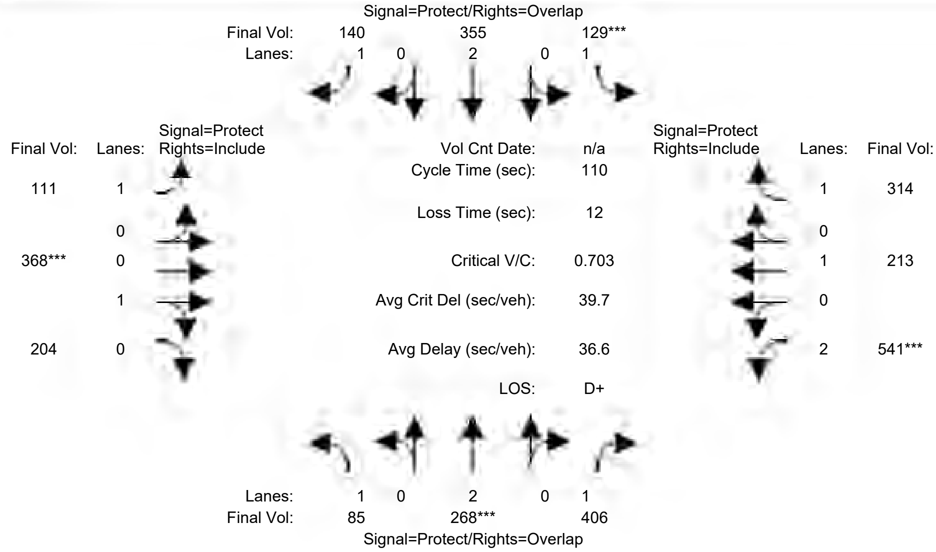
Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	97	285	584	427	453	336	40	191	34	317	281	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	285	584	427	453	336	40	191	34	317	281	144
Added Vol:	71	0	10	0	0	65	69	47	41	13	67	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	285	594	427	453	401	109	238	75	330	348	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	285	594	427	453	401	109	238	75	330	348	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	285	594	427	453	401	109	238	75	330	348	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	285	594	427	453	401	109	238	75	330	348	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.75	0.25	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1416	446	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.08	0.34	0.24	0.12	0.23	0.06	0.17	0.17	0.10	0.18	0.08
Crit Moves:			****	****				****		****		
Green/Cycle:	0.20	0.27	0.40	0.29	0.36	0.44	0.09	0.20	0.20	0.12	0.23	0.23
Volume/Cap:	0.47	0.27	0.85	0.85	0.34	0.52	0.70	0.85	0.85	0.85	0.79	0.36
Delay/Veh:	36.0	28.6	37.5	47.2	23.7	20.6	58.1	56.2	56.2	59.7	45.7	32.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	28.6	37.5	47.2	23.7	20.6	58.1	56.2	56.2	59.7	45.7	32.7
LOS by Move:	D+	C	D+	D	C	C+	E+	E+	E+	E+	D	C-
HCM2kAvgQ:	5	3	21	16	5	10	5	12	12	7	11	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #5: Maude Avenue and SR 237 Ramps



Street Name:	SR 237 Ramp Connectors						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	37	268	393	129	355	70	76	305	138	522	163	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	268	393	129	355	70	76	305	138	522	163	314
Added Vol:	48	0	13	0	0	70	35	63	66	19	50	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	268	406	129	355	140	111	368	204	541	213	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	268	406	129	355	140	111	368	204	541	213	314
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	268	406	129	355	140	111	368	204	541	213	314
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	268	406	129	355	140	111	368	204	541	213	314
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.62	0.38	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	1750	1186	658	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.23	0.07	0.09	0.08	0.06	0.31	0.31	0.17	0.11	0.18
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.10	0.34	0.10	0.12	0.30	0.18	0.44	0.44	0.24	0.51	0.51
Volume/Cap:	0.58	0.70	0.67	0.70	0.77	0.27	0.35	0.70	0.70	0.70	0.22	0.35
Delay/Veh:	54.6	53.7	33.7	59.2	54.2	29.4	40.2	27.7	27.7	40.9	15.2	16.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.6	53.7	33.7	59.2	54.2	29.4	40.2	27.7	27.7	40.9	15.2	16.6
LOS by Move:	D-	D-	C-	E+	D-	C	D	C	C	D	B	B
HCM2kAvgQ:	4	6	13	6	8	4	4	17	17	10	4	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #7: Maude Avenue and Mary Avenue

Signal=Protect/Rights=Include
Final Vol: 48 32 50***
Lanes: 0 1 1 0 2

Signal=Protect Rights=Include (Eastbound) — Final Vol: / Lanes:
128*** 2
0
557 1
1
96 0

Signal=Protect Rights=Include (Westbound) — Lanes: / Final Vol:
0 241
1
1 812***
0
2 152

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 150
Loss Time (sec): 12
Critical V/C: 0.534
Avg Crit Del (sec/veh): 34.0
Avg Delay (sec/veh): 37.3
LOS: D+

Lanes: 2 0 2 0 1
Final Vol: 346 240 267***
Signal=Protect/Rights=Include

Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	346	240	267	50	32	48	128	557	96	152	812	241
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	346	240	267	50	32	48	128	557	96	152	812	241
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	346	240	267	50	32	48	128	557	96	152	812	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	346	240	267	50	32	48	128	557	96	152	812	241
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	346	240	267	50	32	48	128	557	96	152	812	241
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	346	240	267	50	32	48	128	557	96	152	812	241
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.68	0.32	2.00	1.51	0.49
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	3201	552	3150	2874	853
Capacity Analysis Module:												
Vol/Sat:	0.11	0.06	0.15	0.02	0.02	0.03	0.04	0.17	0.17	0.05	0.28	0.28
Crit Moves:			****	****			****				****	
Green/Cycle:	0.20	0.28	0.28	0.05	0.12	0.12	0.07	0.46	0.46	0.13	0.52	0.52
Volume/Cap:	0.54	0.23	0.54	0.34	0.14	0.22	0.54	0.37	0.37	0.37	0.54	0.54
Delay/Veh:	54.4	41.6	47.1	70.6	58.7	59.6	69.6	26.2	26.2	60.4	24.5	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	41.6	47.1	70.6	58.7	59.6	69.6	26.2	26.2	60.4	24.5	24.5
LOS by Move:	D-	D	D	E	E+	E+	E	C	C	E	C	C
HCM2kAvgQ:	9	4	11	2	1	2	4	10	10	4	16	16

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #7: Maude Avenue and Mary Avenue

Signal=Protect/Rights=Include
Final Vol: 98 323*** 203
Lanes: 0 1 1 0 2

Westbound side (left): Signal=Protect Rights=Include
Final Vol: 38, 532***, 388
Lanes: 2, 0, 1, 1, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 130
Loss Time (sec): 12
Critical V/C: 0.534
Avg Crit Del (sec/veh): 36.6
Avg Delay (sec/veh): 36.0
LOS: D+

Signal=Protect Rights=Include
Lanes: 0, 1, 1, 0, 2
Final Vol: 65, 529, 281***

Lanes: 2 0 2 0 1
Final Vol: 104*** 36 155
Signal=Protect/Rights=Include

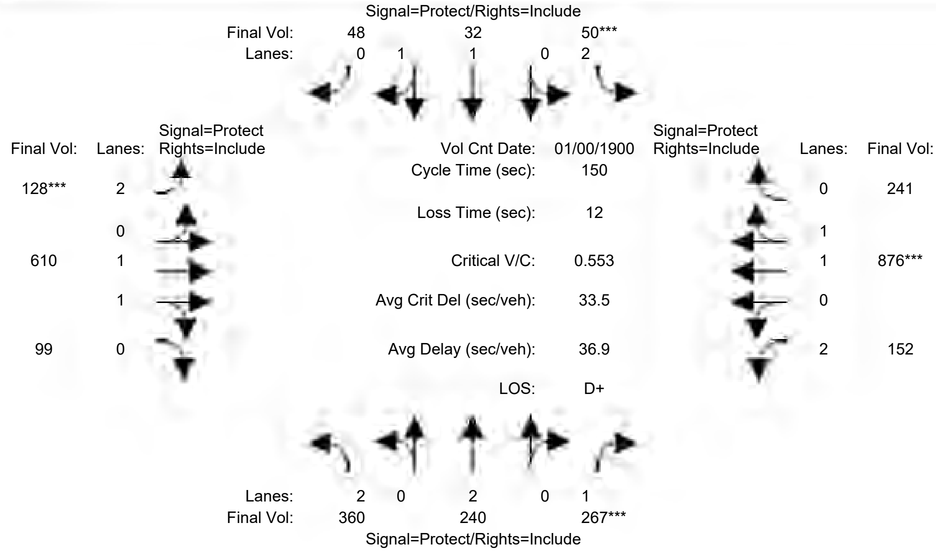
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	104	36	155	203	323	98	38	532	388	281	529	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	36	155	203	323	98	38	532	388	281	529	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	36	155	203	323	98	38	532	388	281	529	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	36	155	203	323	98	38	532	388	281	529	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	36	155	203	323	98	38	532	388	281	529	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	36	155	203	323	98	38	532	388	281	529	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.99	0.95	0.83	0.98	0.95
Lanes:	2.00	2.00	1.00	2.00	1.52	0.48	2.00	1.13	0.87	2.00	1.78	0.22
Final Sat.:	3150	3800	1750	3150	2838	861	3150	2138	1560	3150	3295	405
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.09	0.06	0.11	0.11	0.01	0.25	0.25	0.09	0.16	0.16
Crit Moves:	****				****			****		****		
Green/Cycle:	0.06	0.16	0.16	0.12	0.21	0.21	0.16	0.47	0.47	0.17	0.47	0.47
Volume/Cap:	0.53	0.06	0.56	0.56	0.53	0.53	0.08	0.53	0.53	0.53	0.34	0.34
Delay/Veh:	62.0	46.4	52.9	56.2	46.1	46.1	46.6	25.0	25.0	50.6	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.0	46.4	52.9	56.2	46.1	46.1	46.6	25.0	25.0	50.6	21.5	21.5
LOS by Move:	E	D	D-	E+	D	D	D	C	C	D	C+	C+
HCM2kAvgQ:	3	1	7	5	8	8	1	13	13	7	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #7: Maude Avenue and Mary Avenue



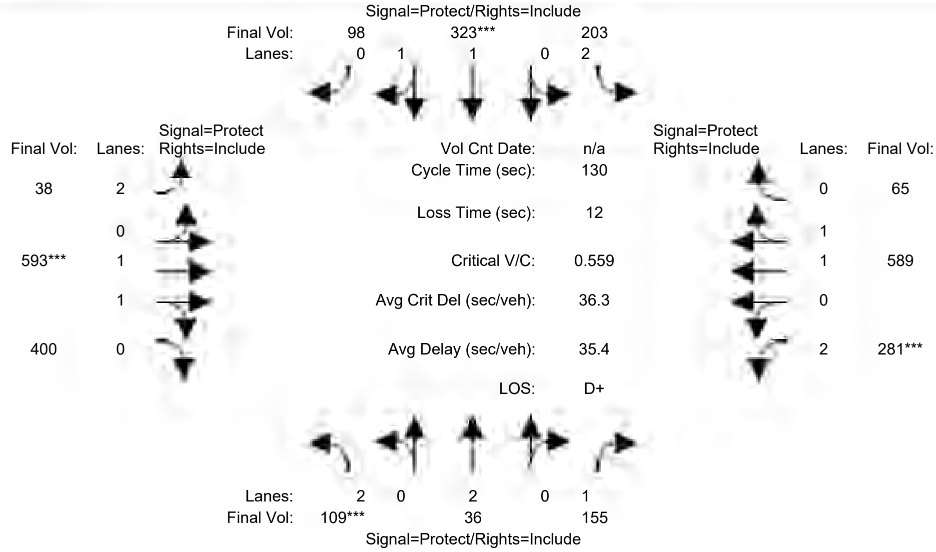
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	346	240	267	50	32	48	128	557	96	152	812	241
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	346	240	267	50	32	48	128	557	96	152	812	241
Added Vol:	14	0	0	0	0	0	0	53	3	0	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	360	240	267	50	32	48	128	610	99	152	876	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	360	240	267	50	32	48	128	610	99	152	876	241
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	360	240	267	50	32	48	128	610	99	152	876	241
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	360	240	267	50	32	48	128	610	99	152	876	241
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.70	0.30	2.00	1.54	0.46
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	3231	524	3150	2926	805
Capacity Analysis Module:												
Vol/Sat:	0.11	0.06	0.15	0.02	0.02	0.03	0.04	0.19	0.19	0.05	0.30	0.30
Crit Moves:			****	****			****				****	
Green/Cycle:	0.20	0.27	0.27	0.05	0.12	0.12	0.07	0.48	0.48	0.12	0.53	0.53
Volume/Cap:	0.57	0.23	0.56	0.34	0.14	0.23	0.56	0.39	0.39	0.39	0.56	0.56
Delay/Veh:	55.4	42.7	48.7	70.6	59.6	60.5	70.6	25.1	25.1	61.3	23.9	23.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.4	42.7	48.7	70.6	59.6	60.5	70.6	25.1	25.1	61.3	23.9	23.9
LOS by Move:	E+	D	D	E	E+	E	E	C	C	E	C	C
HCM2kAvgQ:	9	4	12	2	1	2	4	10	10	4	17	17

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #7: Maude Avenue and Mary Avenue



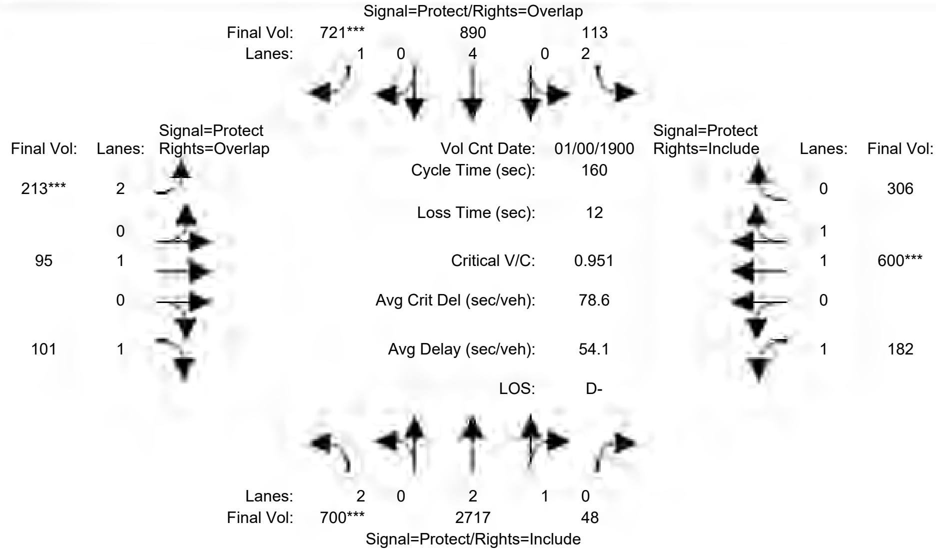
Street Name:	Mary Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	104	36	155	203	323	98	38	532	388	281	529	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	36	155	203	323	98	38	532	388	281	529	65
Added Vol:	5	0	0	0	0	0	0	61	12	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	36	155	203	323	98	38	593	400	281	589	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	36	155	203	323	98	38	593	400	281	589	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	36	155	203	323	98	38	593	400	281	589	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	36	155	203	323	98	38	593	400	281	589	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	2.00	1.50	0.50	2.00	1.15	0.85	2.00	1.79	0.21
Final Sat.:	3150	3800	1750	3150	2858	867	3150	2194	1480	3150	3393	374
Capacity Analysis Module:												
Vol/Sat:	0.03	0.01	0.09	0.06	0.11	0.11	0.01	0.27	0.27	0.09	0.17	0.17
Crit Moves:	****				****			****		****		
Green/Cycle:	0.06	0.15	0.15	0.11	0.20	0.20	0.15	0.48	0.48	0.16	0.49	0.49
Volume/Cap:	0.56	0.06	0.58	0.58	0.56	0.56	0.08	0.56	0.56	0.56	0.35	0.35
Delay/Veh:	62.9	47.1	54.3	57.3	47.6	47.6	47.3	24.1	24.1	51.8	20.5	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.9	47.1	54.3	57.3	47.6	47.6	47.3	24.1	24.1	51.8	20.5	20.5
LOS by Move:	E	D	D-	E+	D	D	D	C	C	D-	C+	C+
HCM2kAvgQ:	3	1	7	5	8	8	1	14	14	7	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #8: Maude Avenue and Mathilda Avenue



Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	700	2717	48	113	890	721	213	95	101	182	600	306
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	700	2717	48	113	890	721	213	95	101	182	600	306
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	700	2717	48	113	890	721	213	95	101	182	600	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	700	2717	48	113	890	721	213	95	101	182	600	306
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	700	2717	48	113	890	721	213	95	101	182	600	306
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	700	2717	48	113	890	721	213	95	101	182	600	306
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.94	0.06	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.29	0.71
Final Sat.:	3150	5593	99	3150	7600	1750	3150	1900	1750	1750	2446	1247
Capacity Analysis Module:												
Vol/Sat:	0.22	0.49	0.49	0.04	0.12	0.41	0.07	0.05	0.06	0.10	0.25	0.25
Crit Moves:	****					****	****				****	
Green/Cycle:	0.23	0.55	0.55	0.05	0.36	0.43	0.07	0.12	0.36	0.21	0.26	0.26
Volume/Cap:	0.95	0.89	0.89	0.73	0.32	0.95	0.95	0.40	0.16	0.51	0.95	0.95
Delay/Veh:	82.3	35.5	35.5	91.0	36.9	65.2	120.3	65.8	35.2	57.5	76.8	76.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.3	35.5	35.5	91.0	36.9	65.2	120.3	65.8	35.2	57.5	76.8	76.8
LOS by Move:	F	D+	D+	F	D+	E	F	E	D+	E+	E-	E-
HCM2kAvgQ:	19	37	37	5	8	41	7	4	3	9	27	27

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #8: Maude Avenue and Mathilda Avenue

Signal=Protect/Rights=Overlap
Final Vol: 231 2544 510***
Lanes: 1 0 4 0 2

Signal=Protect Rights=Overlap (westbound side): Final Vol: 599*** / 424 / 263; Lanes: 2, 0, 1, 0, 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 160
Loss Time (sec): 12
Critical V/C: 0.990
Avg Crit Del (sec/veh): 82.5
Avg Delay (sec/veh): 62.7
LOS: E

Signal=Protect Rights=Include: Lanes: 0, 1, 1, 0, 1; Final Vol: 352*** / 209 / 247

Lanes: 2 0 2 1 0
Final Vol: 150 1838*** 193
Signal=Protect/Rights=Include

Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	150	1838	193	510	2544	231	599	424	263	247	209	352
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	1838	193	510	2544	231	599	424	263	247	209	352
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	1838	193	510	2544	231	599	424	263	247	209	352
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	1838	193	510	2544	231	599	424	263	247	209	352
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	1838	193	510	2544	231	599	424	263	247	209	352
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	1838	193	510	2544	231	599	424	263	247	209	352
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.70	0.30	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5067	532	3150	7600	1750	3150	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.36	0.36	0.16	0.33	0.13	0.19	0.22	0.15	0.14	0.11	0.20
Crit Moves:		****		****			****					****
Green/Cycle:	0.07	0.37	0.37	0.16	0.46	0.66	0.19	0.24	0.31	0.15	0.20	0.20
Volume/Cap:	0.72	0.99	0.99	0.99	0.72	0.20	0.99	0.92	0.49	0.92	0.54	0.99
Delay/Veh:	85.0	67.9	67.9	103.8	35.3	11.0	98.5	83.2	45.8	101.6	57.7	98.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	67.9	67.9	103.8	35.3	11.0	98.5	83.2	45.8	101.6	57.7	98.8
LOS by Move:	F	E	E	F	D+	B+	F	F	D	F	E+	F
HCM2kAvgQ:	5	38	38	20	25	5	20	22	11	16	9	24

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #8: Maude Avenue and Mathilda Avenue

Signal=Protect/Rights=Overlap
Final Vol: 721*** 890 113
Lanes: 1 0 4 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Include	Lanes:	Final Vol:
213***	2		Vol Cnt Date:	01/00/1900		0	306
			Cycle Time (sec):	160			
	0		Loss Time (sec):	12		1	
117	1		Critical V/C:	0.971		1	624***
	0		Avg Crit Del (sec/veh):	83.3		0	
132	1		Avg Delay (sec/veh):	56.1		1	182
			LOS:	E+			

Lanes: 2 0 2 1 0
Final Vol: 740*** 2717 48
Signal=Protect/Rights=Include

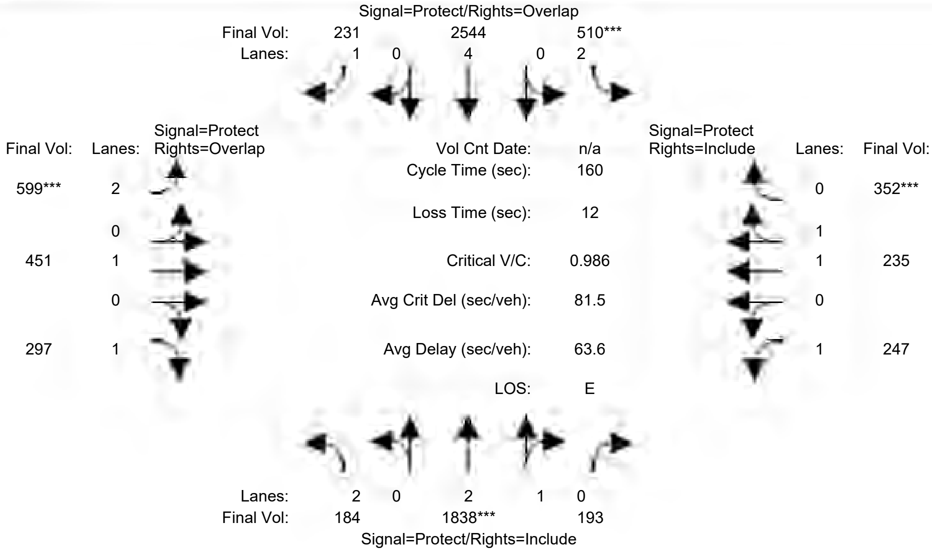
Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	700	2717	48	113	890	721	213	95	101	182	600	306
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	700	2717	48	113	890	721	213	95	101	182	600	306
Added Vol:	40	0	0	0	0	0	0	22	31	0	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	740	2717	48	113	890	721	213	117	132	182	624	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	740	2717	48	113	890	721	213	117	132	182	624	306
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	740	2717	48	113	890	721	213	117	132	182	624	306
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	740	2717	48	113	890	721	213	117	132	182	624	306
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.94	0.06	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.31	0.69
Final Sat.:	3150	5593	99	3150	7600	1750	3150	1900	1750	1750	2480	1216
Capacity Analysis Module:												
Vol/Sat:	0.23	0.49	0.49	0.04	0.12	0.41	0.07	0.06	0.08	0.10	0.25	0.25
Crit Moves:	****					****	****				****	
Green/Cycle:	0.24	0.55	0.55	0.05	0.35	0.42	0.07	0.12	0.37	0.21	0.26	0.26
Volume/Cap:	0.97	0.89	0.89	0.73	0.33	0.97	0.97	0.50	0.21	0.51	0.97	0.97
Delay/Veh:	85.7	35.4	35.4	90.9	37.8	71.1	126.7	67.2	35.0	57.6	81.0	81.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.7	35.4	35.4	90.9	37.8	71.1	126.7	67.2	35.0	57.6	81.0	81.0
LOS by Move:	F	D+	D+	F	D+	E	F	E	D+	E+	F	F
HCM2kAvgQ:	21	37	37	5	8	43	8	5	5	9	28	28

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #8: Maude Avenue and Mathilda Avenue



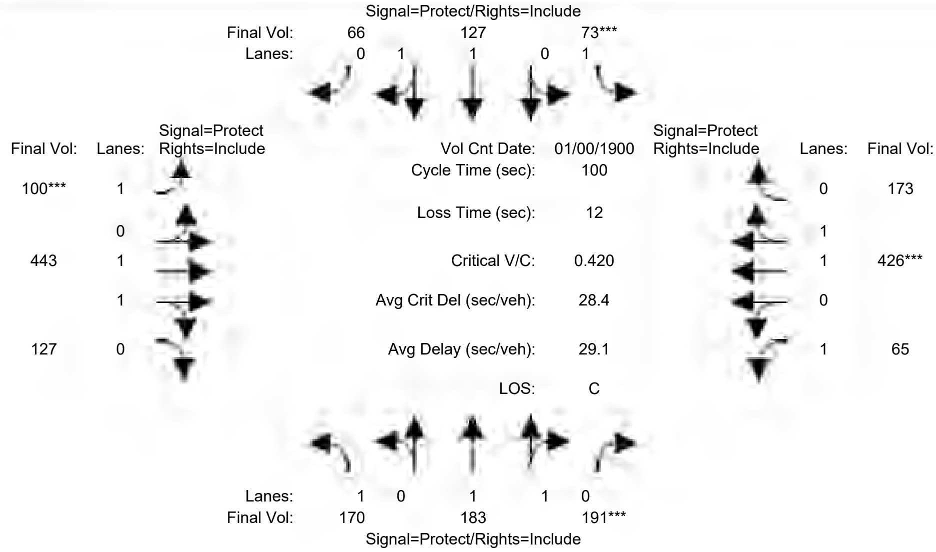
Street Name:	Mathilda Avenue						Maude Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	150	1838	193	510	2544	231	599	424	263	247	209	352
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	1838	193	510	2544	231	599	424	263	247	209	352
Added Vol:	34	0	0	0	0	0	0	27	34	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	184	1838	193	510	2544	231	599	451	297	247	235	352
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	1838	193	510	2544	231	599	451	297	247	235	352
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	1838	193	510	2544	231	599	451	297	247	235	352
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	1838	193	510	2544	231	599	451	297	247	235	352
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	4.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150	5117	537	3150	7600	1750	3150	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.36	0.36	0.16	0.33	0.13	0.19	0.24	0.17	0.14	0.12	0.20
Crit Moves:		****		****			****					****
Green/Cycle:	0.08	0.36	0.36	0.16	0.45	0.64	0.19	0.25	0.33	0.15	0.20	0.20
Volume/Cap:	0.74	0.99	0.99	0.99	0.74	0.21	0.99	0.95	0.52	0.95	0.61	0.99
Delay/Veh:	83.7	67.1	67.1	102.6	37.3	11.9	97.3	89.2	44.4	110.9	59.0	96.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.7	67.1	67.1	102.6	37.3	11.9	97.3	89.2	44.4	110.9	59.0	96.8
LOS by Move:	F	E	E	F	D+	B+	F	F	D	F	E+	F
HCM2kAvgQ:	6	37	37	20	26	5	21	24	12	17	11	24

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #9: East Middlefield Road and Whisman Road



Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	170	183	191	73	127	66	100	443	127	65	426	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	183	191	73	127	66	100	443	127	65	426	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	183	191	73	127	66	100	443	127	65	426	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	183	191	73	127	66	100	443	127	65	426	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	183	191	73	127	66	100	443	127	65	426	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	183	191	73	127	66	100	443	127	65	426	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.28	0.72	1.00	1.53	0.47	1.00	1.39	0.61
Final Sat.:	1750	1900	1750	1750	2429	1262	1750	2898	831	1750	2637	1071
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.11	0.04	0.05	0.05	0.06	0.15	0.15	0.04	0.16	0.16
Crit Moves:			****	****			****				****	
Green/Cycle:	0.18	0.26	0.26	0.10	0.18	0.18	0.14	0.36	0.36	0.16	0.38	0.38
Volume/Cap:	0.54	0.37	0.42	0.42	0.29	0.29	0.42	0.43	0.43	0.23	0.42	0.42
Delay/Veh:	39.1	30.6	31.1	43.9	35.7	35.7	40.8	24.6	24.6	36.7	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.1	30.6	31.1	43.9	35.7	35.7	40.8	24.6	24.6	36.7	22.8	22.8
LOS by Move:	D	C	C	D	D+	D+	D	C	C	D+	C+	C+
HCM2kAvgQ:	6	5	5	3	3	3	3	7	7	2	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #9: East Middlefield Road and Whisman Road

Signal=Protect/Rights=Include
Final Vol: 82 297*** 126
Lanes: 0 1 1 0 1

Signal=Protect Rights=Include (Westbound side: Signal=Protect Rights=Include)

Final Vol:	Lanes:			Final Vol:	Lanes:
81	1			54	0
	0				1
397	1			560	1
	1				0
481***	0			340***	1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 12
Critical V/C: 0.701
Avg Crit Del (sec/veh): 36.0
Avg Delay (sec/veh): 31.9
LOS: C

Lanes: 1 0 1 1 0
Final Vol: 80*** 72 64
Signal=Protect/Rights=Include

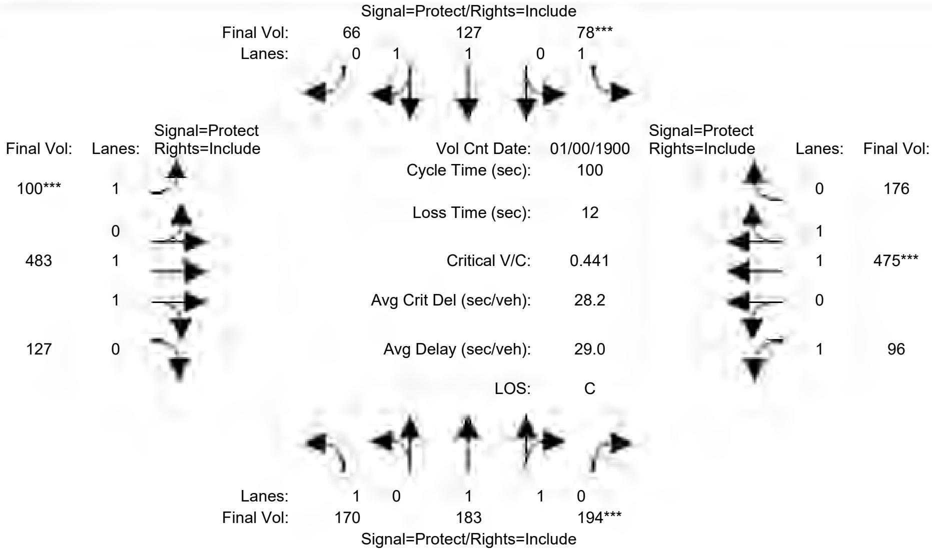
Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	80	72	64	126	297	82	81	397	481	340	560	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	72	64	126	297	82	81	397	481	340	560	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	72	64	126	297	82	81	397	481	340	560	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	72	64	126	297	82	81	397	481	340	560	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	72	64	126	297	82	81	397	481	340	560	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	72	64	126	297	82	81	397	481	340	560	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.95	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	1.03	0.97	1.00	1.56	0.44	1.00	1.00	1.00	1.00	1.82	0.18
Final Sat.:	1750	1958	1740	1750	2899	800	1750	1900	1750	1750	3374	325
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.04	0.07	0.10	0.10	0.05	0.21	0.27	0.19	0.17	0.17
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.12	0.12	0.12	0.14	0.14	0.19	0.38	0.38	0.27	0.45	0.45
Volume/Cap:	0.46	0.31	0.31	0.60	0.73	0.73	0.24	0.56	0.73	0.73	0.37	0.37
Delay/Veh:	44.3	40.6	40.6	46.5	46.6	46.6	34.8	25.1	29.3	39.5	18.3	18.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	40.6	40.6	46.5	46.6	46.6	34.8	25.1	29.3	39.5	18.3	18.3
LOS by Move:	D	D	D	D	D	D	C-	C	C	D	B-	B-
HCM2kAvgQ:	3	2	2	5	7	7	2	10	15	10	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #9: East Middlefield Road and Whisman Road



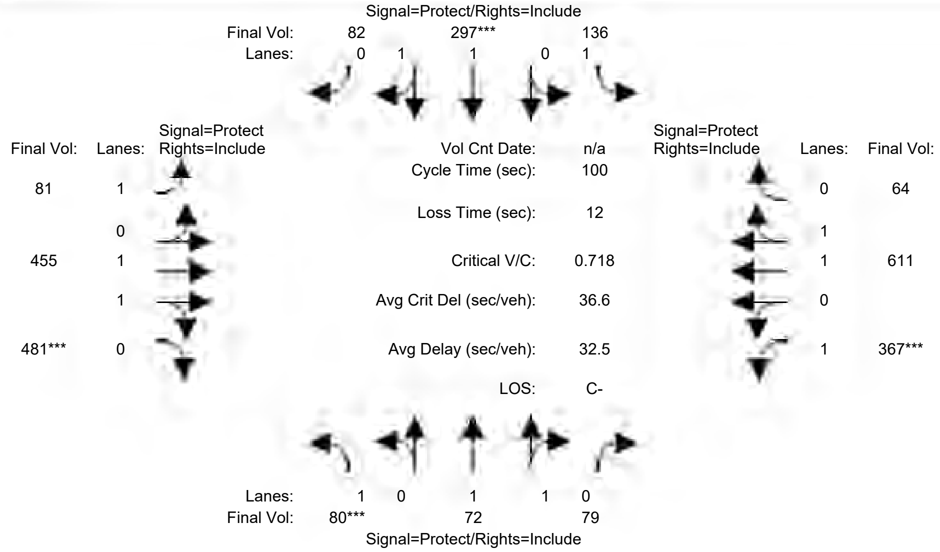
Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	170	183	191	73	127	66	100	443	127	65	426	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	183	191	73	127	66	100	443	127	65	426	173
Added Vol:	0	0	3	5	0	0	0	40	0	31	49	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	183	194	78	127	66	100	483	127	96	475	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	183	194	78	127	66	100	483	127	96	475	176
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	183	194	78	127	66	100	483	127	96	475	176
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	183	194	78	127	66	100	483	127	96	475	176
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.28	0.72	1.00	1.56	0.44	1.00	1.43	0.57
Final Sat.:	1750	1900	1750	1750	2429	1262	1750	2956	777	1750	2710	1004
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.11	0.04	0.05	0.05	0.06	0.16	0.16	0.05	0.18	0.18
Crit Moves:			****	****			****				****	
Green/Cycle:	0.18	0.25	0.25	0.10	0.18	0.18	0.13	0.37	0.37	0.16	0.40	0.40
Volume/Cap:	0.55	0.38	0.44	0.44	0.30	0.30	0.44	0.44	0.44	0.35	0.44	0.44
Delay/Veh:	39.7	31.2	31.9	44.0	36.0	36.0	41.5	24.0	24.0	38.2	22.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.7	31.2	31.9	44.0	36.0	36.0	41.5	24.0	24.0	38.2	22.2	22.2
LOS by Move:	D	C	C	D	D+	D+	D	C	C	D+	C+	C+
HCM2kAvgQ:	6	5	6	3	3	3	4	7	7	3	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #9: East Middlefield Road and Whisman Road



Street Name:	Whisman Road						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	72	64	126	297	82	81	397	481	340	560	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	72	64	126	297	82	81	397	481	340	560	54
Added Vol:	0	0	15	10	0	0	0	58	0	27	51	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	72	79	136	297	82	81	455	481	367	611	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	72	79	136	297	82	81	455	481	367	611	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	72	79	136	297	82	81	455	481	367	611	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	72	79	136	297	82	81	455	481	367	611	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.54	0.46	1.00	1.00	1.00	1.00	1.80	0.20
Final Sat.:	1750	1900	1750	1750	2924	807	1750	1900	1750	1750	3412	357
Capacity Analysis Module:												
Vol/Sat:	0.05	0.04	0.05	0.08	0.10	0.10	0.05	0.24	0.27	0.21	0.18	0.18
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.12	0.12	0.12	0.14	0.14	0.18	0.37	0.37	0.28	0.46	0.46
Volume/Cap:	0.46	0.32	0.38	0.66	0.75	0.75	0.26	0.65	0.75	0.75	0.39	0.39
Delay/Veh:	44.3	40.9	41.4	50.0	47.9	47.9	35.6	27.6	30.4	39.3	17.7	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	40.9	41.4	50.0	47.9	47.9	35.6	27.6	30.4	39.3	17.7	17.7
LOS by Move:	D	D	D	D	D	D	D+	C	C	D	B	B
HCM2kAvgQ:	3	2	3	6	7	7	2	12	15	11	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include
Final Vol: 111 0 202***
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include (Eastbound) | Signal=Protect Rights=Include (Westbound)

Final Vol:	Lanes:			Lanes:	Final Vol:
263***	1	Vol Cnt Date: 01/00/1900	Cycle Time (sec): 70	0	505
	0	Loss Time (sec): 9		1	
457	2	Critical V/C: 0.610		1	657***
	0	Avg Crit Del (sec/veh): 17.9		0	
0	0	Avg Delay (sec/veh): 15.3		0	0
		LOS: B			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	202	0	111	263	457	0	0	657	505
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	202	0	111	263	457	0	0	657	505
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	202	0	111	263	457	0	0	657	505
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	202	0	111	263	457	0	0	657	505
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	202	0	111	263	457	0	0	657	505
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	202	0	111	263	457	0	0	657	505
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.09	0.91
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2071	1592
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.00	0.06	0.15	0.12	0.00	0.00	0.32	0.32
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.14	0.00	0.14	0.23	0.73	0.00	0.00	0.49	0.49
Volume/Cap:	0.00	0.00	0.00	0.45	0.00	0.44	0.64	0.17	0.00	0.00	0.64	0.64
Delay/Veh:	0.0	0.0	0.0	28.2	0.0	28.7	27.6	3.0	0.0	0.0	13.9	13.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	28.2	0.0	28.7	27.6	3.0	0.0	0.0	13.9	13.9
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	3	6	1	0	0	10	10

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include
Final Vol: 387*** 0 454
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include (West approach)
Final Vol: / Lanes:
110*** 1
0
548 2
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 65
Loss Time (sec): 9
Critical V/C: 0.562
Avg Crit Del (sec/veh): 18.3
Avg Delay (sec/veh): 15.6
LOS: B

Signal=Protect Rights=Include (East approach)
Lanes: / Final Vol:
0 163
1
1 577***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	454	0	387	110	548	0	0	577	163
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	454	0	387	110	548	0	0	577	163
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	454	0	387	110	548	0	0	577	163
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	454	0	387	110	548	0	0	577	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	454	0	387	110	548	0	0	577	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	454	0	387	110	548	0	0	577	163
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.55	0.45
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2884	815
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.22	0.06	0.14	0.00	0.00	0.20	0.20
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.11	0.47	0.00	0.00	0.36	0.36
Volume/Cap:	0.00	0.00	0.00	0.37	0.00	0.56	0.56	0.31	0.00	0.00	0.56	0.56
Delay/Veh:	0.0	0.0	0.0	14.1	0.0	16.4	31.0	10.9	0.0	0.0	17.4	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	14.1	0.0	16.4	31.0	10.9	0.0	0.0	17.4	17.4
LOS by Move:	A	A	A	B	A	B	C	B+	A	A	B	B
HCM2kAvgQ:	0	0	0	4	0	7	2	3	0	0	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #10: East Middlefield Road and Ellis Street

Signal=Split/Rights=Include
Final Vol: 147 0 257***
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include (East Bound)
Final Vol: 281*** Lanes: 1
Lanes: 0
Final Vol: 486 Lanes: 2
Lanes: 0
Final Vol: 0 Lanes: 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.688
Avg Crit Del (sec/veh): 19.3
Avg Delay (sec/veh): 16.9
LOS: B

Signal=Protect Rights=Include (West Bound)
Lanes: 0 Final Vol: 604
Lanes: 1
Lanes: 1 Final Vol: 703***
Lanes: 0
Lanes: 0 Final Vol: 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

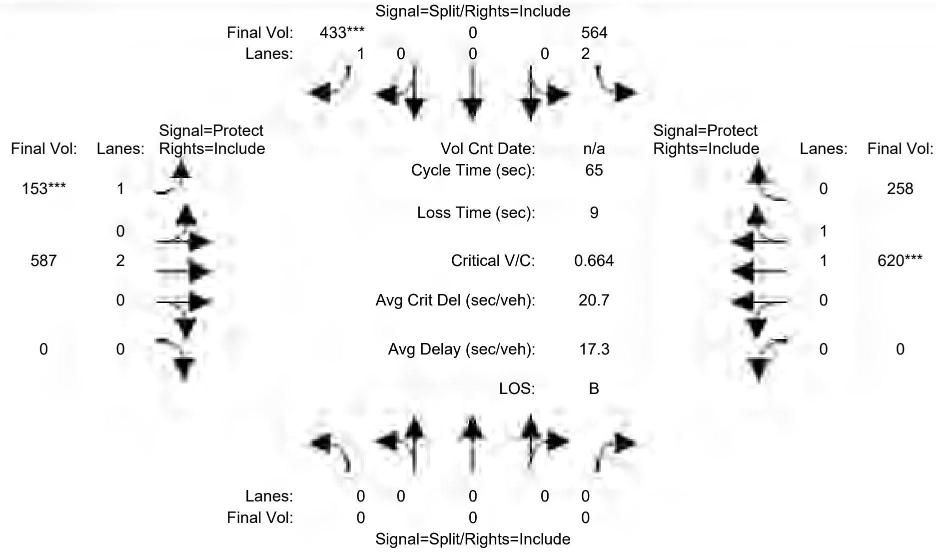
Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	202	0	111	263	457	0	0	657	505
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	202	0	111	263	457	0	0	657	505
Added Vol:	0	0	0	55	0	36	18	29	0	0	46	99
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	257	0	147	281	486	0	0	703	604
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	257	0	147	281	486	0	0	703	604
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	257	0	147	281	486	0	0	703	604
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	257	0	147	281	486	0	0	703	604
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.03	0.97
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	1966	1689
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.08	0.16	0.13	0.00	0.00	0.36	0.36
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.14	0.00	0.14	0.23	0.73	0.00	0.00	0.50	0.50
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.59	0.71	0.18	0.00	0.00	0.71	0.71
Delay/Veh:	0.0	0.0	0.0	29.8	0.0	31.7	31.0	3.0	0.0	0.0	14.8	14.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.8	0.0	31.7	31.0	3.0	0.0	0.0	14.8	14.8
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	4	0	4	6	2	0	0	11	11

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #10: East Middlefield Road and Ellis Street



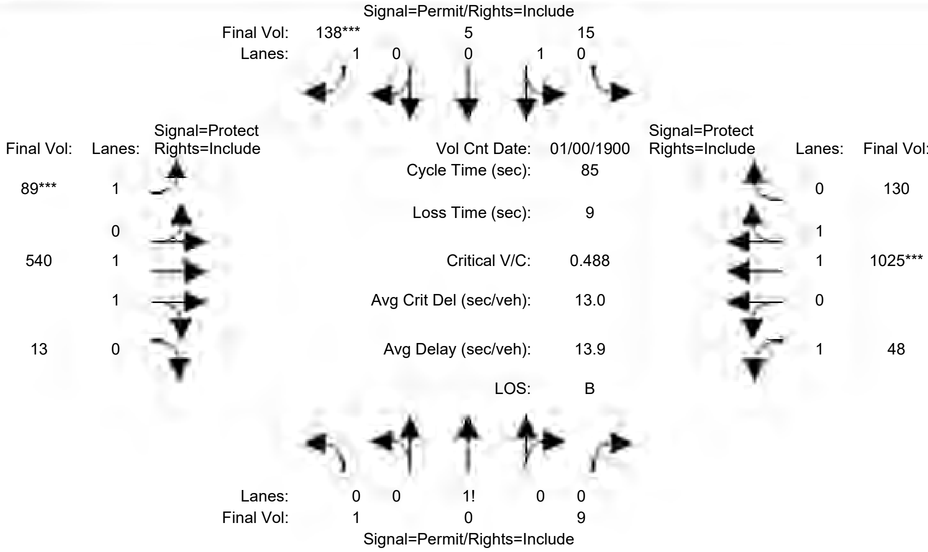
Street Name:	Ellis Street						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	454	0	387	110	548	0	0	577	163
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	454	0	387	110	548	0	0	577	163
Added Vol:	0	0	0	104	0	38	36	46	0	0	51	89
PasserByVol:	0	0	0	6	0	8	7	-7	0	0	-8	6
Initial Fut:	0	0	0	564	0	433	153	587	0	0	620	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	564	0	433	153	587	0	0	620	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	564	0	433	153	587	0	0	620	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	564	0	433	153	587	0	0	620	258
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	1.38	0.62
Final Sat.:	0	0	0	3150	0	1750	1750	3800	0	0	2617	1089
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.25	0.09	0.15	0.00	0.00	0.24	0.24
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.37	0.00	0.37	0.13	0.49	0.00	0.00	0.36	0.36
Volume/Cap:	0.00	0.00	0.00	0.48	0.00	0.66	0.66	0.32	0.00	0.00	0.66	0.66
Delay/Veh:	0.0	0.0	0.0	15.9	0.0	19.6	33.9	10.1	0.0	0.0	18.9	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	15.9	0.0	19.6	33.9	10.1	0.0	0.0	18.9	18.9
LOS by Move:	A	A	A	B	A	B-	C-	B+	A	A	B-	B-
HCM2kAvgQ:	0	0	0	6	0	9	3	3	0	0	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #11: East Middlefield Road and Logue Avenue



Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	1	0	9	15	5	138	89	540	13	48	1025	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	9	15	5	138	89	540	13	48	1025	130
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	9	15	5	138	89	540	13	48	1025	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	0	9	15	5	138	89	540	13	48	1025	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	9	15	5	138	89	540	13	48	1025	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	9	15	5	138	89	540	13	48	1025	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.10	0.00	0.90	0.77	0.23	1.00	1.00	1.95	0.05	1.00	1.76	0.24
Final Sat.:	175	0	1575	1339	446	1750	1750	3703	89	1750	3340	424
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.01	0.01	0.08	0.05	0.15	0.15	0.03	0.31	0.31
Crit Moves:						****	****				****	
Green/Cycle:	0.16	0.00	0.16	0.16	0.16	0.16	0.10	0.47	0.47	0.26	0.63	0.63
Volume/Cap:	0.04	0.00	0.04	0.07	0.07	0.49	0.49	0.31	0.31	0.10	0.49	0.49
Delay/Veh:	30.1	0.0	30.1	30.3	30.3	33.8	38.0	14.2	14.2	23.7	8.6	8.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.1	0.0	30.1	30.3	30.3	33.8	38.0	14.2	14.2	23.7	8.6	8.6
LOS by Move:	C	A	C	C	C	C-	D+	B	B	C	A	A
HCM2kAvgQ:	0	0	0	1	1	4	2	4	4	1	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #11: East Middlefield Road and Logue Avenue

Signal=Permit/Rights=Include

Final Vol: 134*** 2 123
Lanes: 1 0 0 1 0

Signal=Protect Rights=Include (westbound side, left) | Signal=Protect Rights=Include (eastbound side, right)

Final Vol:	Lanes:				Lanes:	Final Vol:
61	1		Vol Cnt Date:	01/00/1900	0	32
	0		Cycle Time (sec):	105	1	
1003***	1		Loss Time (sec):	9	1	513
	1		Critical V/C:	0.396	0	
3	0		Avg Crit Del (sec/veh):	12.6	1	24***
			Avg Delay (sec/veh):	16.3		
			LOS:	B		

Lanes: 0 0 1! 0 0
Final Vol: 16 1 38
Signal=Permit/Rights=Include

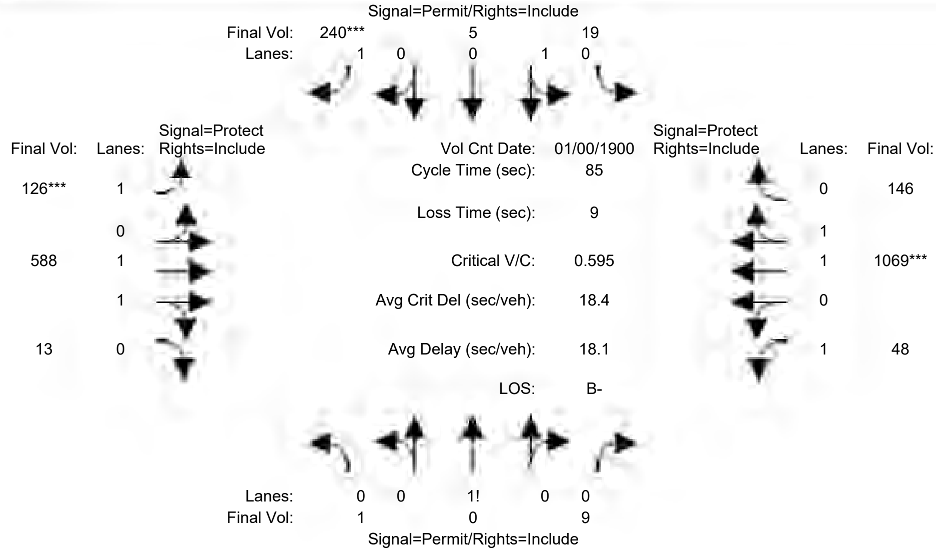
Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	16	1	38	123	2	134	61	1003	3	24	513	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1	38	123	2	134	61	1003	3	24	513	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	1	38	123	2	134	61	1003	3	24	513	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1	38	123	2	134	61	1003	3	24	513	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1	38	123	2	134	61	1003	3	24	513	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1	38	123	2	134	61	1003	3	24	513	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.29	0.02	0.69	0.98	0.02	1.00	1.00	1.99	0.01	1.00	1.88	0.12
Final Sat.:	509	32	1209	1771	29	1750	1750	3689	11	1750	3483	217
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.07	0.07	0.08	0.03	0.27	0.27	0.01	0.15	0.15
Crit Moves:						****		****		****		
Green/Cycle:	0.19	0.19	0.19	0.19	0.19	0.19	0.23	0.66	0.66	0.07	0.50	0.50
Volume/Cap:	0.17	0.17	0.17	0.37	0.37	0.41	0.15	0.41	0.41	0.21	0.29	0.29
Delay/Veh:	36.1	36.1	36.1	38.1	38.1	38.5	32.7	8.4	8.4	47.2	15.4	15.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.1	36.1	36.1	38.1	38.1	38.5	32.7	8.4	8.4	47.2	15.4	15.4
LOS by Move:	D+	D+	D+	D+	D+	D+	C-	A	A	D	B	B
HCM2kAvgQ:	2	2	2	4	4	4	2	8	8	1	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #11: East Middlefield Road and Logue Avenue



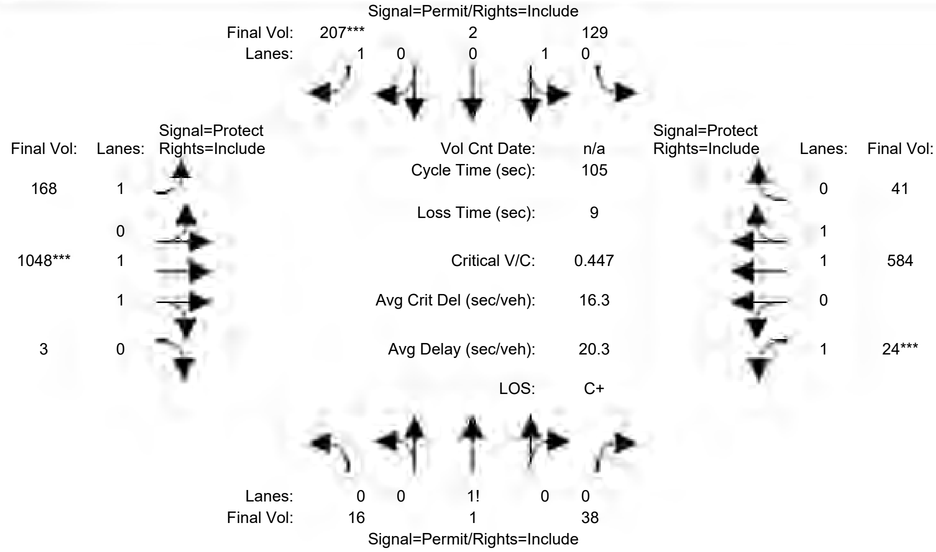
Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	1	0	9	15	5	138	89	540	13	48	1025	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	9	15	5	138	89	540	13	48	1025	130
Added Vol:	0	0	0	4	0	102	37	48	0	0	44	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	9	19	5	240	126	588	13	48	1069	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	0	9	19	5	240	126	588	13	48	1069	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	9	19	5	240	126	588	13	48	1069	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	9	19	5	240	126	588	13	48	1069	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.10	0.00	0.90	0.80	0.20	1.00	1.00	1.95	0.05	1.00	1.74	0.26
Final Sat.:	175	0	1575	1409	371	1750	1750	3711	82	1750	3309	452
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.01	0.01	0.14	0.07	0.16	0.16	0.03	0.32	0.32
Crit Moves:						****	****				****	
Green/Cycle:	0.23	0.00	0.23	0.23	0.23	0.23	0.12	0.44	0.44	0.23	0.54	0.54
Volume/Cap:	0.02	0.00	0.02	0.06	0.06	0.60	0.60	0.36	0.36	0.12	0.60	0.60
Delay/Veh:	25.3	0.0	25.3	25.6	25.6	31.6	39.9	16.2	16.2	26.2	13.6	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	0.0	25.3	25.6	25.6	31.6	39.9	16.2	16.2	26.2	13.6	13.6
LOS by Move:	C	A	C	C	C	C	D	B	B	C	B	B
HCM2kAvgQ:	0	0	0	1	1	7	3	5	5	1	11	11

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #11: East Middlefield Road and Logue Avenue



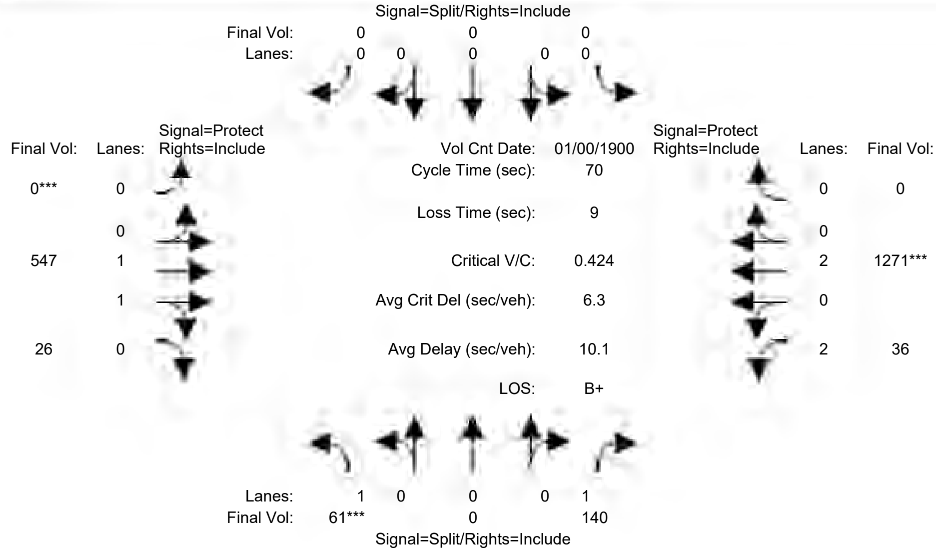
Street Name:	Logue Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	0	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	16	1	38	123	2	134	61	1003	3	24	513	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1	38	123	2	134	61	1003	3	24	513	32
Added Vol:	0	0	0	6	0	70	105	45	0	0	71	9
PasserByVol:	0	0	0	0	0	3	2	0	0	0	0	0
Initial Fut:	16	1	38	129	2	207	168	1048	3	24	584	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1	38	129	2	207	168	1048	3	24	584	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1	38	129	2	207	168	1048	3	24	584	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1	38	129	2	207	168	1048	3	24	584	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.29	0.02	0.69	0.99	0.01	1.00	1.00	1.99	0.01	1.00	1.86	0.14
Final Sat.:	510	32	1211	1725	27	1750	1750	3788	11	1750	3531	248
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.07	0.07	0.12	0.10	0.28	0.28	0.01	0.17	0.17
Crit Moves:						****		****		****		
Green/Cycle:	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.59	0.59	0.07	0.42	0.42
Volume/Cap:	0.12	0.12	0.12	0.29	0.29	0.47	0.40	0.47	0.47	0.21	0.40	0.40
Delay/Veh:	30.3	30.3	30.3	32.0	32.0	33.9	33.9	12.1	12.1	47.2	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	30.3	30.3	32.0	32.0	33.9	33.9	12.1	12.1	47.2	21.5	21.5
LOS by Move:	C	C	C	C	C	C-	C-	B	B	D	C+	C+
HCM2kAvgQ:	1	1	1	4	4	6	5	9	9	1	7	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #12: Ferguson Drive and East Middlefield Road



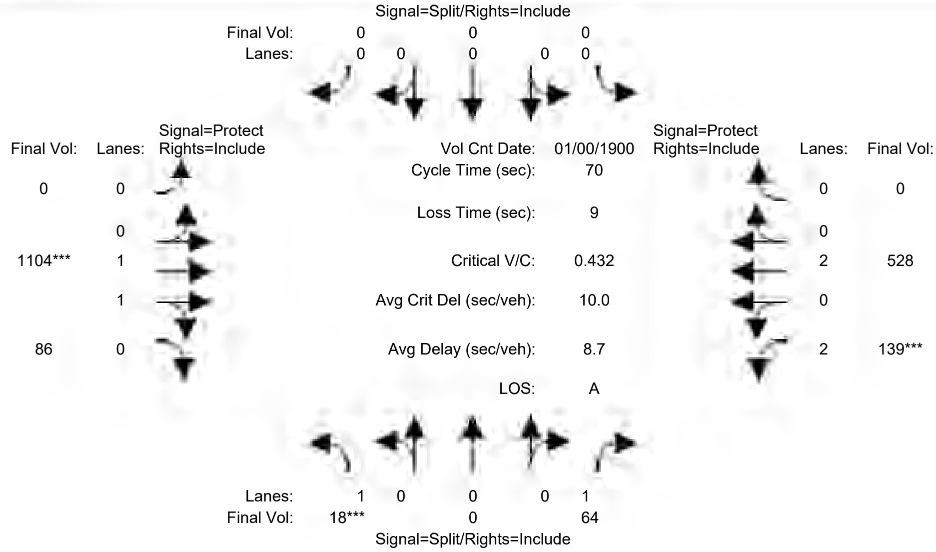
Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	61	0	140	0	0	0	0	547	26	36	1271	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	0	140	0	0	0	0	547	26	36	1271	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	0	140	0	0	0	0	547	26	36	1271	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	0	140	0	0	0	0	547	26	36	1271	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	0	140	0	0	0	0	547	26	36	1271	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	0	140	0	0	0	0	547	26	36	1271	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.90	0.10	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3614	172	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.08	0.00	0.00	0.00	0.00	0.15	0.15	0.01	0.33	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.41	0.41	0.27	0.68	0.00
Volume/Cap:	0.18	0.00	0.42	0.00	0.00	0.00	0.00	0.37	0.37	0.04	0.49	0.00
Delay/Veh:	24.1	0.0	25.9	0.0	0.0	0.0	0.0	14.5	14.5	18.8	5.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.1	0.0	25.9	0.0	0.0	0.0	0.0	14.5	14.5	18.8	5.4	0.0
LOS by Move:	C	A	C	A	A	A	A	B	B	B-	A	A
HCM2kAvgQ:	1	0	3	0	0	0	0	4	4	0	6	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #12: Ferguson Drive and East Middlefield Road



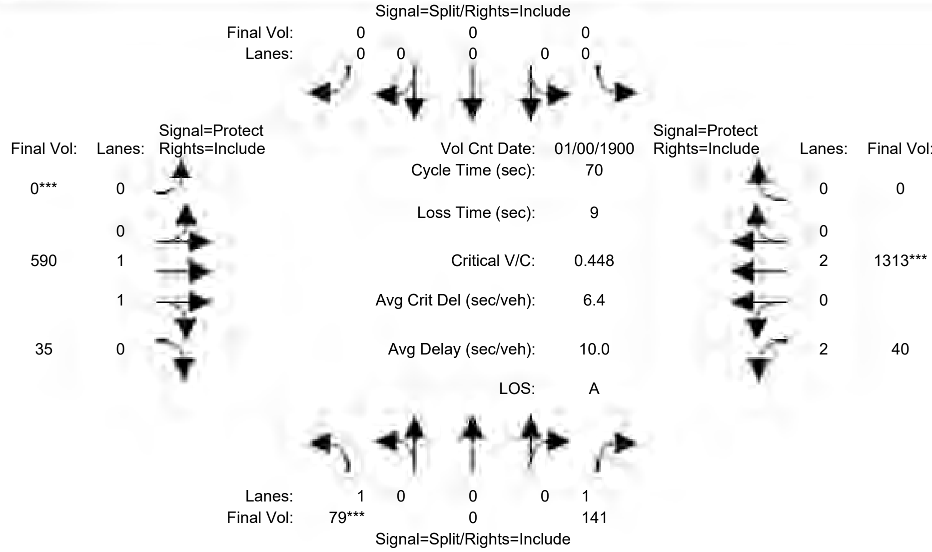
Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	18	0	64	0	0	0	0	1104	86	139	528	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	0	64	0	0	0	0	1104	86	139	528	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	0	64	0	0	0	0	1104	86	139	528	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	18	0	64	0	0	0	0	1104	86	139	528	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	0	64	0	0	0	0	1104	86	139	528	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	0	64	0	0	0	0	1104	86	139	528	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.85	0.15	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3432	267	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.32	0.32	0.04	0.14	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.63	0.63	0.10	0.73	0.00
Volume/Cap:	0.07	0.00	0.26	0.00	0.00	0.00	0.00	0.51	0.51	0.44	0.19	0.00
Delay/Veh:	26.1	0.0	27.2	0.0	0.0	0.0	0.0	7.3	7.3	30.6	3.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.1	0.0	27.2	0.0	0.0	0.0	0.0	7.3	7.3	30.6	3.0	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	0	0	2	0	0	0	0	7	7	2	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #12: Ferguson Drive and East Middlefield Road



Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	61	0	140	0	0	0	0	547	26	36	1271	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	0	140	0	0	0	0	547	26	36	1271	0
Added Vol:	18	0	1	0	0	0	0	43	9	4	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	0	141	0	0	0	0	590	35	40	1313	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	0	141	0	0	0	0	590	35	40	1313	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	0	141	0	0	0	0	590	35	40	1313	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	0	141	0	0	0	0	590	35	40	1313	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.88	0.12	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3570	212	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.08	0.00	0.00	0.00	0.00	0.17	0.17	0.01	0.35	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.43	0.43	0.26	0.69	0.00
Volume/Cap:	0.25	0.00	0.45	0.00	0.00	0.00	0.00	0.38	0.38	0.05	0.50	0.00
Delay/Veh:	25.1	0.0	26.6	0.0	0.0	0.0	0.0	13.7	13.7	19.4	5.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.1	0.0	26.6	0.0	0.0	0.0	0.0	13.7	13.7	19.4	5.2	0.0
LOS by Move:	C	A	C	A	A	A	A	B	B	B-	A	A
HCM2kAvgQ:	2	0	3	0	0	0	0	4	4	0	7	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #12: Ferguson Drive and East Middlefield Road

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	n/a		0	0
			Cycle Time (sec):	70			
	0		Loss Time (sec):	9		0	
1145***	1		Critical V/C:	0.454		2	592
	1		Avg Crit Del (sec/veh):	10.3		0	
96	0		Avg Delay (sec/veh):	8.8		2	151***
			LOS:	A			

Lanes: 1 0 0 0 1
Final Vol: 33*** 0 66
Signal=Split/Rights=Include

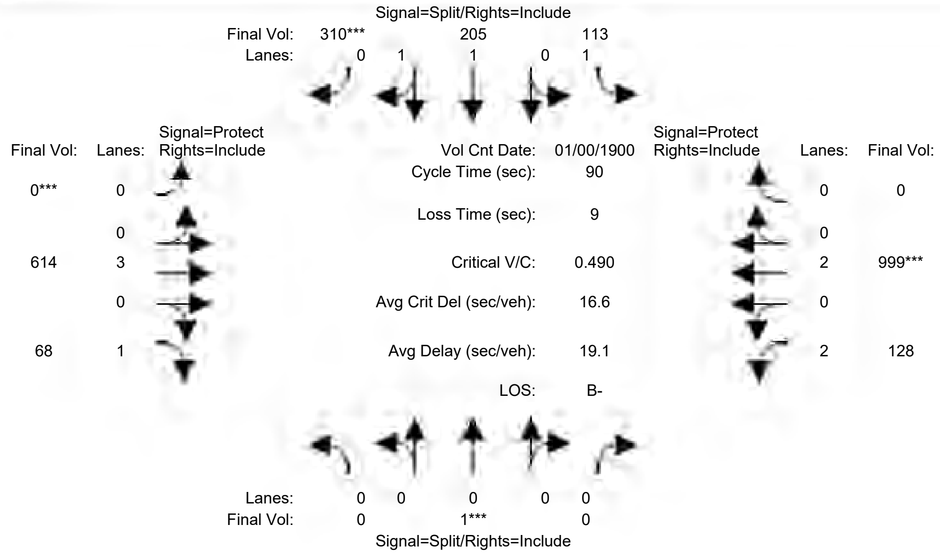
Street Name:	Ferguson Drive						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	0	10	0	0	0	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	18	0	64	0	0	0	0	1104	86	139	528	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	0	64	0	0	0	0	1104	86	139	528	0
Added Vol:	15	0	2	0	0	0	0	41	10	12	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	66	0	0	0	0	1145	96	151	592	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	0	66	0	0	0	0	1145	96	151	592	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	0	66	0	0	0	0	1145	96	151	592	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	0	66	0	0	0	0	1145	96	151	592	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.83	0.17	2.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3483	292	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.33	0.33	0.05	0.16	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.63	0.63	0.10	0.73	0.00
Volume/Cap:	0.13	0.00	0.26	0.00	0.00	0.00	0.00	0.52	0.52	0.48	0.21	0.00
Delay/Veh:	26.4	0.0	27.3	0.0	0.0	0.0	0.0	7.4	7.4	30.9	3.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	0.0	27.3	0.0	0.0	0.0	0.0	7.4	7.4	30.9	3.1	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	1	0	2	0	0	0	0	7	7	2	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp



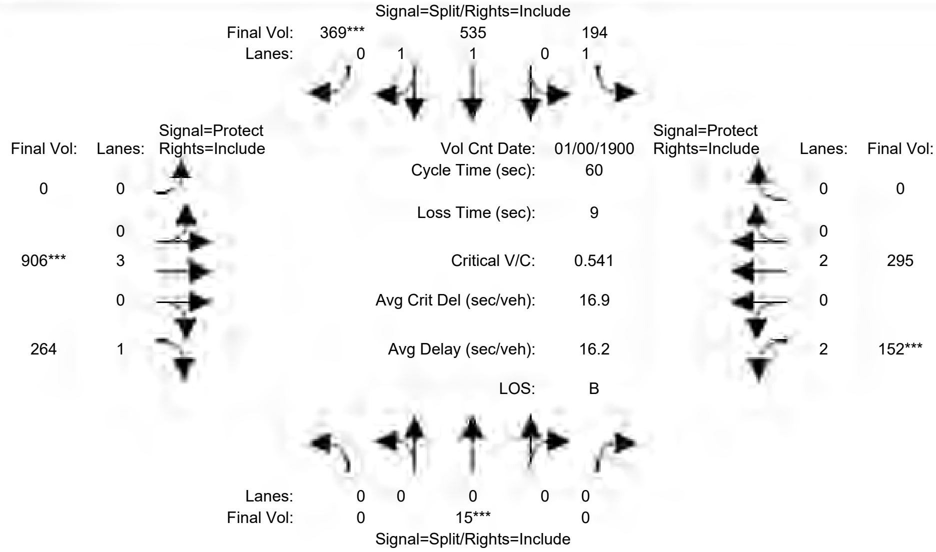
Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	1	0	113	205	310	0	614	68	128	999	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	0	113	205	310	0	614	68	128	999	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	0	113	205	310	0	614	68	128	999	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	0	113	205	310	0	614	68	128	999	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	113	205	310	0	614	68	128	999	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	0	113	205	310	0	614	68	128	999	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	1.00	0.00	1.00	1.00	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	1750	1900	1750	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.11	0.18	0.00	0.11	0.04	0.04	0.26	0.00
Crit Moves:		****				****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.36	0.36	0.36	0.00	0.32	0.32	0.22	0.54	0.00
Volume/Cap:	0.00	0.49	0.00	0.18	0.30	0.49	0.00	0.34	0.12	0.18	0.49	0.00
Delay/Veh:	0.0	166	0.0	19.7	20.6	22.6	0.0	23.7	22.0	28.6	13.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	166	0.0	19.7	20.6	22.6	0.0	23.7	22.0	28.6	13.3	0.0
LOS by Move:	A	F	A	B-	C+	C+	A	C	C+	C	B	A
HCM2kAvgQ:	0	0	0	2	4	7	0	4	1	2	8	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp



Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	15	0	194	535	369	0	906	264	152	295	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	0	194	535	369	0	906	264	152	295	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	0	194	535	369	0	906	264	152	295	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	0	194	535	369	0	906	264	152	295	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	0	194	535	369	0	906	264	152	295	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	15	0	194	535	369	0	906	264	152	295	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	1.00	0.00	1.00	1.16	0.84	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	1750	2189	1510	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.01	0.00	0.11	0.24	0.24	0.00	0.16	0.15	0.05	0.08	0.00
Crit Moves:		****				****		****		****		
Green/Cycle:	0.00	0.01	0.00	0.44	0.44	0.44	0.00	0.28	0.28	0.12	0.40	0.00
Volume/Cap:	0.00	0.56	0.00	0.25	0.56	0.56	0.00	0.56	0.53	0.41	0.19	0.00
Delay/Veh:	0.0	53.7	0.0	10.9	13.1	13.1	0.0	18.8	19.3	25.4	11.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	53.7	0.0	10.9	13.1	13.1	0.0	18.8	19.3	25.4	11.8	0.0
LOS by Move:	A	D-	A	B+	B	B	A	B-	B-	C	B+	A
HCM2kAvgQ:	0	1	0	2	6	6	0	5	4	2	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp

Signal=Split/Rights=Include

Final Vol: 329*** 238 114
Lanes: 0 1 1 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
0***	0		Cycle Time (sec):	90		0	0
	0		Loss Time (sec):	9		0	
646	3		Critical V/C:	0.510		2	1027***
	0		Avg Crit Del (sec/veh):	17.0		0	
80	1		Avg Delay (sec/veh):	19.5		2	128
			LOS:	B-			

Lanes: 0 0 0 0 0
Final Vol: 0 1*** 0
Signal=Split/Rights=Include

Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	1	0	113	205	310	0	614	68	128	999	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	0	113	205	310	0	614	68	128	999	0
Added Vol:	0	0	0	1	33	19	0	32	12	0	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	0	114	238	329	0	646	80	128	1027	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	0	114	238	329	0	646	80	128	1027	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	114	238	329	0	646	80	128	1027	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	0	114	238	329	0	646	80	128	1027	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	1.00	0.00	1.00	1.00	1.00	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	1750	1900	1750	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.07	0.13	0.19	0.00	0.11	0.05	0.04	0.27	0.00
Crit Moves:		****				****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.00	0.31	0.31	0.22	0.53	0.00
Volume/Cap:	0.00	0.51	0.00	0.18	0.34	0.51	0.00	0.36	0.15	0.19	0.51	0.00
Delay/Veh:	0.0	183	0.0	19.3	20.6	22.5	0.0	24.0	22.3	29.0	13.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	183	0.0	19.3	20.6	22.5	0.0	24.0	22.3	29.0	13.8	0.0
LOS by Move:	A	F	A	B-	C+	C+	A	C	C+	C	B	A
HCM2kAvgQ:	0	0	0	2	5	7	0	4	2	2	9	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #13: East Middlefield Road and SR237 Westbound On-Ramp

Signal=Split/Rights=Include
Final Vol: 401*** 583 199
Lanes: 0 1 1 0 1

Signal=Protect Rights=Include (Eastbound)
Final Vol: 0, 941***, 272
Lanes: 0, 0, 3, 0, 1

Vol Cnt Date: n/a
Cycle Time (sec): 60
Loss Time (sec): 9
Critical V/C: 0.576
Avg Crit Del (sec/veh): 17.3
Avg Delay (sec/veh): 16.6
LOS: B

Signal=Protect Rights=Include (Westbound)
Lanes: 0, 0, 2, 0, 2
Final Vol: 0, 339, 152***

Lanes: 0 0 0 0 0
Final Vol: 0 15*** 0
Signal=Split/Rights=Include

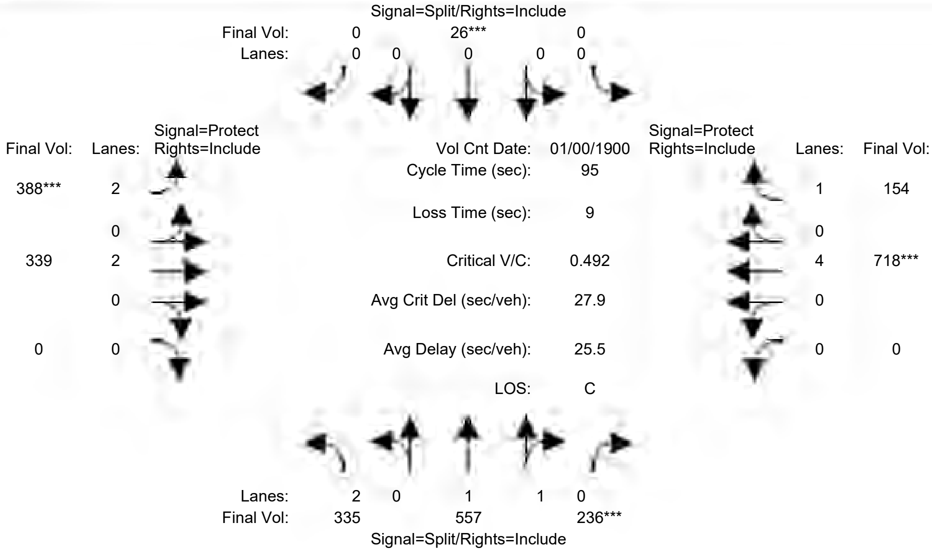
Street Name:	SR 237 On-Ramps						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	10	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	15	0	194	535	369	0	906	264	152	295	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	0	194	535	369	0	906	264	152	295	0
Added Vol:	0	0	0	5	48	32	0	35	8	0	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	0	199	583	401	0	941	272	152	339	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	0	199	583	401	0	941	272	152	339	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	0	199	583	401	0	941	272	152	339	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	15	0	199	583	401	0	941	272	152	339	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	0.00	1.00	0.00	1.00	1.14	0.86	0.00	3.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	1750	2175	1496	0	5700	1750	3150	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.01	0.00	0.11	0.27	0.27	0.00	0.17	0.16	0.05	0.09	0.00
Crit Moves:		****				****		****		****		
Green/Cycle:	0.00	0.01	0.00	0.45	0.45	0.45	0.00	0.27	0.27	0.12	0.39	0.00
Volume/Cap:	0.00	0.60	0.00	0.26	0.60	0.60	0.00	0.60	0.57	0.41	0.23	0.00
Delay/Veh:	0.0	64.3	0.0	10.6	13.2	13.2	0.0	19.6	20.3	25.4	12.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	64.3	0.0	10.6	13.2	13.2	0.0	19.6	20.3	25.4	12.3	0.0
LOS by Move:	A	E	A	B+	B	B	A	B-	C+	C	B	A
HCM2kAvgQ:	0	1	0	2	7	7	0	5	5	2	2	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp



Street Name: 237 Eastbound Off-Ramp and Connec — East Middlefield Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	335	557	236	0	26	0	388	339	0	0	718	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	557	236	0	26	0	388	339	0	0	718	154
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	335	557	236	0	26	0	388	339	0	0	718	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	335	557	236	0	26	0	388	339	0	0	718	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	557	236	0	26	0	388	339	0	0	718	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	335	557	236	0	26	0	388	339	0	0	718	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.37	0.63	0.00	1.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2603	1103	0	1900	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.21	0.21	0.00	0.01	0.00	0.12	0.09	0.00	0.00	0.09	0.09
Crit Moves:			****		****		****				****	
Green/Cycle:	0.44	0.44	0.44	0.00	0.03	0.00	0.25	0.44	0.00	0.00	0.19	0.19
Volume/Cap:	0.24	0.49	0.49	0.00	0.49	0.00	0.49	0.20	0.00	0.00	0.49	0.46
Delay/Veh:	17.1	19.5	19.5	0.0	52.6	0.0	30.9	16.3	0.0	0.0	34.5	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	19.5	19.5	0.0	52.6	0.0	30.9	16.3	0.0	0.0	34.5	35.0
LOS by Move:	B	B-	B-	A	D-	A	C	B	A	A	C-	C-
HCM2kAvgQ:	4	9	9	0	1	0	6	3	0	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp

Signal=Split/Rights=Include
Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
284	2		Cycle Time (sec):	100		1	131
	0		Loss Time (sec):	9		0	
849***	2		Critical V/C:	0.359		4	380
	0		Avg Crit Del (sec/veh):	15.3		0	
0	0		Avg Delay (sec/veh):	19.5		0	0***
			LOS:	B-			

Lanes: 2 0 1 1 0
Final Vol: 97 266*** 117
Signal=Split/Rights=Include

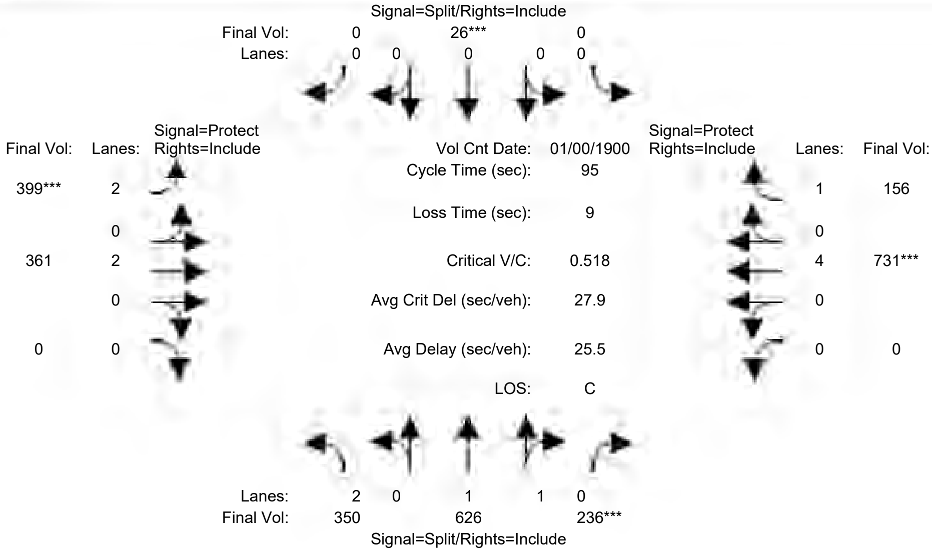
Street Name:	237 Eastbound Off-Ramp and Connec						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	97	266	117	0	-6	0	284	849	0	0	380	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	266	117	0	-6	0	284	849	0	0	380	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	266	117	0	-6	0	284	849	0	0	380	131
User Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	266	117	0	0	0	284	849	0	0	380	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	266	117	0	0	0	284	849	0	0	380	131
PCE Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	266	117	0	0	0	284	849	0	0	380	131
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.37	0.63	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2569	1130	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.10	0.00	0.00	0.00	0.09	0.22	0.00	0.00	0.05	0.07
Crit Moves:		****						****		****		
Green/Cycle:	0.29	0.29	0.29	0.00	0.00	0.00	0.29	0.62	0.00	0.00	0.33	0.33
Volume/Cap:	0.11	0.36	0.36	0.00	0.00	0.00	0.31	0.36	0.00	0.00	0.15	0.23
Delay/Veh:	26.2	28.5	28.5	0.0	0.0	0.0	27.5	9.3	0.0	0.0	23.9	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	28.5	28.5	0.0	0.0	0.0	27.5	9.3	0.0	0.0	23.9	24.7
LOS by Move:	C	C	C	A	A	A	C	A	A	A	C	C
HCM2kAvgQ:	1	5	5	0	0	0	4	6	0	0	2	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp



Street Name:	237 Eastbound Off-Ramp and Connec						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	335	557	236	0	26	0	388	339	0	0	718	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	557	236	0	26	0	388	339	0	0	718	154
Added Vol:	15	69	0	0	0	0	11	22	0	0	13	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	626	236	0	26	0	399	361	0	0	731	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	350	626	236	0	26	0	399	361	0	0	731	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	350	626	236	0	26	0	399	361	0	0	731	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	350	626	236	0	26	0	399	361	0	0	731	156
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.42	0.58	0.00	1.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2696	1017	0	1900	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.23	0.00	0.01	0.00	0.13	0.10	0.00	0.00	0.10	0.09
Crit Moves:			****		****		****				****	
Green/Cycle:	0.45	0.45	0.45	0.00	0.03	0.00	0.24	0.43	0.00	0.00	0.19	0.19
Volume/Cap:	0.25	0.52	0.52	0.00	0.52	0.00	0.52	0.22	0.00	0.00	0.52	0.48
Delay/Veh:	16.4	19.1	19.1	0.0	54.8	0.0	31.7	17.1	0.0	0.0	35.2	35.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.4	19.1	19.1	0.0	54.8	0.0	31.7	17.1	0.0	0.0	35.2	35.7
LOS by Move:	B	B-	B-	A	D-	A	C	B	A	A	D+	D+
HCM2kAvgQ:	4	9	9	0	2	0	6	3	0	0	5	5

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #14: East Middlefield Road and SR 237 Eastbound Off-Ramp

Signal=Split/Rights=Include

Final Vol: 0 0 0
Lanes: 0 0 0 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
299	2		Cycle Time (sec):	100		1	136
			Loss Time (sec):	9			
	0					0	
874***	2		Critical V/C:	0.379		4	401
	0		Avg Crit Del (sec/veh):	15.9		0	
0	0		Avg Delay (sec/veh):	20.2		0	0***
			LOS:	C+			

Lanes: 2 0 1 1 0
Final Vol: 120 308*** 117
Signal=Split/Rights=Include

Street Name: 237 Eastbound Off-Ramp and Connec — East Middlefield Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	0	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	97	266	117	0	-6	0	284	849	0	0	380	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	266	117	0	-6	0	284	849	0	0	380	131
Added Vol:	23	42	0	0	0	0	15	25	0	0	21	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	308	117	0	-6	0	299	874	0	0	401	136
User Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	120	308	117	0	0	0	299	874	0	0	401	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	308	117	0	0	0	299	874	0	0	401	136
PCE Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	308	117	0	0	0	299	874	0	0	401	136
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.42	0.58	0.00	0.00	0.00	2.00	2.00	0.00	0.00	4.00	1.00
Final Sat.:	3150	2690	1022	0	0	0	3150	3800	0	0	7600	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.11	0.11	0.00	0.00	0.00	0.09	0.23	0.00	0.00	0.05	0.08
Crit Moves:		****						****		****		
Green/Cycle:	0.30	0.30	0.30	0.00	0.00	0.00	0.30	0.61	0.00	0.00	0.31	0.31
Volume/Cap:	0.13	0.38	0.38	0.00	0.00	0.00	0.32	0.38	0.00	0.00	0.17	0.25
Delay/Veh:	25.4	27.7	27.7	0.0	0.0	0.0	27.6	10.1	0.0	0.0	25.0	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.4	27.7	27.7	0.0	0.0	0.0	27.6	10.1	0.0	0.0	25.0	25.9
LOS by Move:	C	C	C	A	A	A	C	B+	A	A	C	C
HCM2kAvgQ:	2	5	5	0	0	0	4	7	0	0	2	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #15: East Middlefield Road and Bernardo Avenue

Signal=Permit/Rights=Include
Final Vol: 18 5 17
Lanes: 0 0 1! 0 0

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
123***	1		Cycle Time (sec):	70		0	92
	0		Loss Time (sec):	9		1	
325	1		Critical V/C:	0.424		1	862***
	1		Avg Crit Del (sec/veh):	12.2		0	
130	0		Avg Delay (sec/veh):	12.9		1	30
			LOS:	B			

Lanes: 0 0 1! 0 0
Final Vol: 30 46*** 8
Signal=Permit/Rights=Include

Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	30	46	8	17	5	18	123	325	130	30	862	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	46	8	17	5	18	123	325	130	30	862	92
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	46	8	17	5	18	123	325	130	30	862	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	30	46	8	17	5	18	123	325	130	30	862	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	46	8	17	5	18	123	325	130	30	862	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	46	8	17	5	18	123	325	130	30	862	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.37	0.53	0.10	0.43	0.12	0.45	1.00	1.39	0.61	1.00	1.79	0.21
Final Sat.:	653	1002	174	751	221	795	1750	2649	1060	1750	3405	363
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.02	0.02	0.02	0.07	0.12	0.12	0.02	0.25	0.25
Crit Moves:		****					****				****	
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.14	0.16	0.43	0.43	0.30	0.57	0.57
Volume/Cap:	0.32	0.32	0.32	0.16	0.16	0.16	0.44	0.29	0.29	0.06	0.44	0.44
Delay/Veh:	27.7	27.7	27.7	26.6	26.6	26.6	27.8	13.1	13.1	17.5	8.8	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.7	27.7	27.7	26.6	26.6	26.6	27.8	13.1	13.1	17.5	8.8	8.8
LOS by Move:	C	C	C	C	C	C	C	B	B	B	A	A
HCM2kAvgQ:	2	2	2	1	1	1	3	3	3	1	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #15: East Middlefield Road and Bernardo Avenue

Signal=Permit/Rights=Include
Final Vol: 46 19 71
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (West side) | Signal=Protect Rights=Include (East side)

Final Vol: | Lanes: | | Vol Cnt Date: 01/00/1900 | Lanes: | Final Vol:
47 | 1 | | Cycle Time (sec): 100 | 0 | 24
| 0 | | Loss Time (sec): 9 | 1 |
952*** | 1 | | Critical V/C: 0.393 | 1 | 271
| 1 | | Avg Crit Del (sec/veh): 13.3 | 0 |
22 | 0 | | Avg Delay (sec/veh): 16.4 | 1 | 9***

LOS: B

Lanes: 0 0 1! 0 0
Final Vol: 101 8*** 47
Signal=Permit/Rights=Include

Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	101	8	47	71	19	46	47	952	22	9	271	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	8	47	71	19	46	47	952	22	9	271	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	8	47	71	19	46	47	952	22	9	271	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	8	47	71	19	46	47	952	22	9	271	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	8	47	71	19	46	47	952	22	9	271	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	8	47	71	19	46	47	952	22	9	271	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.65	0.05	0.30	0.52	0.14	0.34	1.00	1.95	0.05	1.00	1.83	0.17
Final Sat.:	1133	90	527	914	244	592	1750	3616	84	1750	3399	301
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.08	0.08	0.08	0.03	0.26	0.26	0.01	0.08	0.08
Crit Moves:		****						****		****		
Green/Cycle:	0.21	0.21	0.21	0.21	0.21	0.21	0.29	0.63	0.63	0.07	0.41	0.41
Volume/Cap:	0.42	0.42	0.42	0.37	0.37	0.37	0.09	0.42	0.42	0.07	0.19	0.19
Delay/Veh:	34.8	34.8	34.8	34.2	34.2	34.2	26.2	9.5	9.5	43.7	19.0	19.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	34.8	34.8	34.2	34.2	34.2	26.2	9.5	9.5	43.7	19.0	19.0
LOS by Move:	C-	C-	C-	C-	C-	C-	C	A	A	D	B-	B-
HCM2kAvgQ:	5	5	5	4	4	4	1	8	8	0	3	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #15: East Middlefield Road and Bernardo Avenue

Signal=Permit/Rights=Include
Final Vol: 18 5 17
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (West)
Final Vol: 123***, Lanes: 1
Lanes: 0
Final Vol: 343, Lanes: 1
Lanes: 1
Final Vol: 133, Lanes: 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.430
Avg Crit Del (sec/veh): 12.2
Avg Delay (sec/veh): 12.9
LOS: B

Signal=Protect Rights=Include (East)
Lanes: 0, Final Vol: 92
Lanes: 1
Lanes: 1, Final Vol: 871***
Lanes: 0
Lanes: 1, Final Vol: 30

Lanes: 0 0 1! 0 0
Final Vol: 35 46*** 8
Signal=Permit/Rights=Include

Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	30	46	8	17	5	18	123	325	130	30	862	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	46	8	17	5	18	123	325	130	30	862	92
Added Vol:	5	0	0	0	0	0	0	18	3	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	46	8	17	5	18	123	343	133	30	871	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	46	8	17	5	18	123	343	133	30	871	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	46	8	17	5	18	123	343	133	30	871	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	46	8	17	5	18	123	343	133	30	871	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.41	0.50	0.09	0.43	0.12	0.45	1.00	1.41	0.59	1.00	1.79	0.21
Final Sat.:	717	943	164	751	221	795	1750	2674	1037	1750	3409	360
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.02	0.02	0.02	0.07	0.13	0.13	0.02	0.26	0.26
Crit Moves:		****					****				****	
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.14	0.16	0.43	0.43	0.30	0.57	0.57
Volume/Cap:	0.34	0.34	0.34	0.16	0.16	0.16	0.45	0.30	0.30	0.06	0.45	0.45
Delay/Veh:	27.8	27.8	27.8	26.6	26.6	26.6	27.9	13.2	13.2	17.5	8.8	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.8	27.8	27.8	26.6	26.6	26.6	27.9	13.2	13.2	17.5	8.8	8.8
LOS by Move:	C	C	C	C	C	C	C	B	B	B	A	A
HCM2kAvgQ:	2	2	2	1	1	1	3	4	4	1	6	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #15: East Middlefield Road and Bernardo Avenue

Signal=Permit/Rights=Include
Final Vol: 46 19 71
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (West approach)
Final Vol: 47, 964***, 32
Lanes: 1, 0, 1, 1, 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 9
Critical V/C: 0.398
Avg Crit Del (sec/veh): 13.7
Avg Delay (sec/veh): 16.7
LOS: B

Signal=Protect Rights=Include (East approach)
Lanes: 0, 1, 1, 0, 1
Final Vol: 24, 284, 9***

Lanes: 0 0 1! 0 0
Final Vol: 111 8*** 47
Signal=Permit/Rights=Include

Street Name:	Bernardo Avenue						East Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	101	8	47	71	19	46	47	952	22	9	271	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	8	47	71	19	46	47	952	22	9	271	24
Added Vol:	10	0	0	0	0	0	0	12	10	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	8	47	71	19	46	47	964	32	9	284	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	8	47	71	19	46	47	964	32	9	284	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	8	47	71	19	46	47	964	32	9	284	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	8	47	71	19	46	47	964	32	9	284	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.68	0.04	0.28	0.53	0.13	0.34	1.00	1.93	0.07	1.00	1.83	0.17
Final Sat.:	1175	85	497	924	247	599	1750	3668	122	1750	3481	294
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.08	0.08	0.08	0.03	0.26	0.26	0.01	0.08	0.08
Crit Moves:		****						****		****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.28	0.62	0.62	0.07	0.40	0.40
Volume/Cap:	0.43	0.43	0.43	0.35	0.35	0.35	0.09	0.43	0.43	0.07	0.20	0.20
Delay/Veh:	34.2	34.2	34.2	33.3	33.3	33.3	26.5	10.0	10.0	43.7	19.4	19.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	34.2	34.2	33.3	33.3	33.3	26.5	10.0	10.0	43.7	19.4	19.4
LOS by Move:	C-	C-	C-	C-	C-	C-	C	B+	B+	D	B-	B-
HCM2kAvgQ:	5	5	5	4	4	4	1	8	8	0	3	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp

Signal=Split/Rights=Overlap
Final Vol: 23 0 256***
Lanes: 1 0 0 0 1

Signal=Protect Rights=Include (west approach) — Final Vol / Lanes: 0*** / 0; 0; 989 / 2; 0; 0 / 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 88
Loss Time (sec): 6
Critical V/C: 0.828
Avg Crit Del (sec/veh): 13.3
Avg Delay (sec/veh): 10.8
LOS: B+

Signal=Protect Rights=Include (east approach) — Lanes / Final Vol: 0 / 0; 0; 2 / 2377***; 0; 0 / 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	0	14	0	63	0	0	63	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	256	0	23	0	989	0	0	2377	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	256	0	23	0	989	0	0	2377	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	256	0	23	0	989	0	0	2377	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	256	0	23	0	989	0	0	2377	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	256	0	23	0	989	0	0	2377	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	256	0	23	0	989	0	0	2377	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.26	0.00	0.00	0.63	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.76	0.00	0.00	0.76	0.00
Volume/Cap:	0.00	0.00	0.00	0.83	0.00	0.07	0.00	0.34	0.00	0.00	0.83	0.00
Delay/Veh:	0.0	0.0	0.0	51.7	0.0	30.3	0.0	3.6	0.0	0.0	9.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	51.7	0.0	30.3	0.0	3.6	0.0	0.0	9.2	0.0
LOS by Move:	A	A	A	D-	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	10	0	1	0	4	0	0	21	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp

Signal=Split/Rights=Overlap
Final Vol: 28 0 387***
Lanes: 1 0 0 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
0	0		Vol Cnt Date:	01/00/1900		0	0
			Cycle Time (sec):	90			
	0		Loss Time (sec):	6		0	
1770***	2		Critical V/C:	0.736		2	1257
	0		Avg Crit Del (sec/veh):	16.4		0	
0	0		Avg Delay (sec/veh):	13.8		0	0***
			LOS:	B			

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

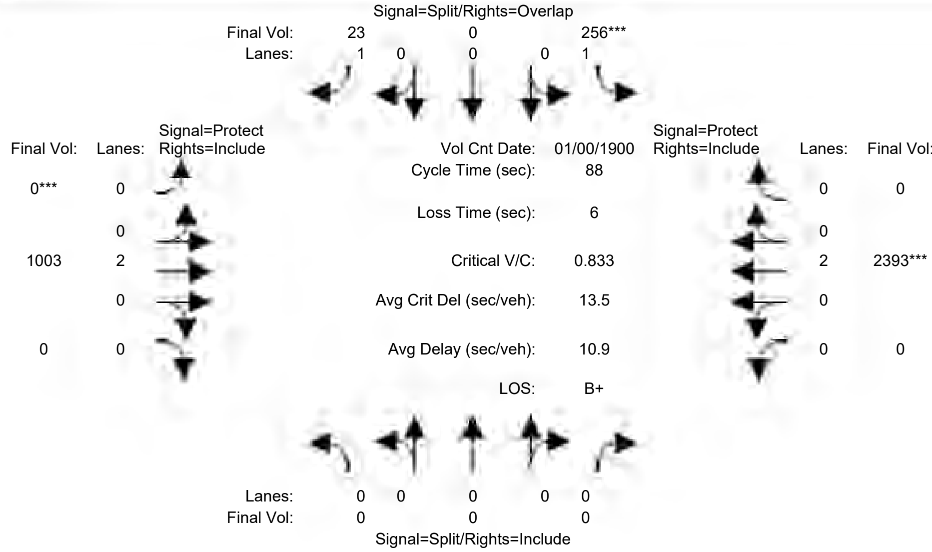
Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	25	0	25	0	54	0	0	54	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	387	0	28	0	1770	0	0	1257	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	387	0	28	0	1770	0	0	1257	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	387	0	28	0	1770	0	0	1257	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	387	0	28	0	1770	0	0	1257	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	387	0	28	0	1770	0	0	1257	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	387	0	28	0	1770	0	0	1257	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.02	0.00	0.47	0.00	0.00	0.33	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.63	0.00	0.00	0.63	0.00
Volume/Cap:	0.00	0.00	0.00	0.74	0.00	0.05	0.00	0.74	0.00	0.00	0.52	0.00
Delay/Veh:	0.0	0.0	0.0	33.7	0.0	22.4	0.0	12.6	0.0	0.0	9.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.7	0.0	22.4	0.0	12.6	0.0	0.0	9.3	0.0
LOS by Move:	A	A	A	C-	A	C+	A	B	A	A	A	A
HCM2kAvgQ:	0	0	0	12	0	1	0	16	0	0	9	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp



Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	0	14	0	63	0	0	63	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	256	0	23	0	989	0	0	2377	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	256	0	23	0	989	0	0	2377	0
Added Vol:	0	0	0	0	0	0	0	14	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	256	0	23	0	1003	0	0	2393	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	256	0	23	0	1003	0	0	2393	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	256	0	23	0	1003	0	0	2393	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	256	0	23	0	1003	0	0	2393	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.26	0.00	0.00	0.63	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.76	0.00	0.00	0.76	0.00
Volume/Cap:	0.00	0.00	0.00	0.83	0.00	0.07	0.00	0.35	0.00	0.00	0.83	0.00
Delay/Veh:	0.0	0.0	0.0	52.4	0.0	30.4	0.0	3.6	0.0	0.0	9.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	52.4	0.0	30.4	0.0	3.6	0.0	0.0	9.3	0.0
LOS by Move:	A	A	A	D-	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	10	0	1	0	4	0	0	22	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #16: Central Expy and SR 85 Southbound Off-Ramp

Signal=Split/Rights=Overlap
Final Vol: 28 0 387***
Lanes: 1 0 0 0 1

Signal=Protect Rights=Include (westbound side)
Final Vol: Lanes: 0 0 / 0 / 1786*** 2 / 0 / 0 0

Signal=Protect Rights=Include (eastbound side)
Lanes: Final Vol: 0 0 / 0 / 2 1271 / 0 / 0 0***

Vol Cnt Date: n/a
Cycle Time (sec): 90
Loss Time (sec): 6
Critical V/C: 0.741
Avg Crit Del (sec/veh): 16.4
Avg Delay (sec/veh): 13.8
LOS: B

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

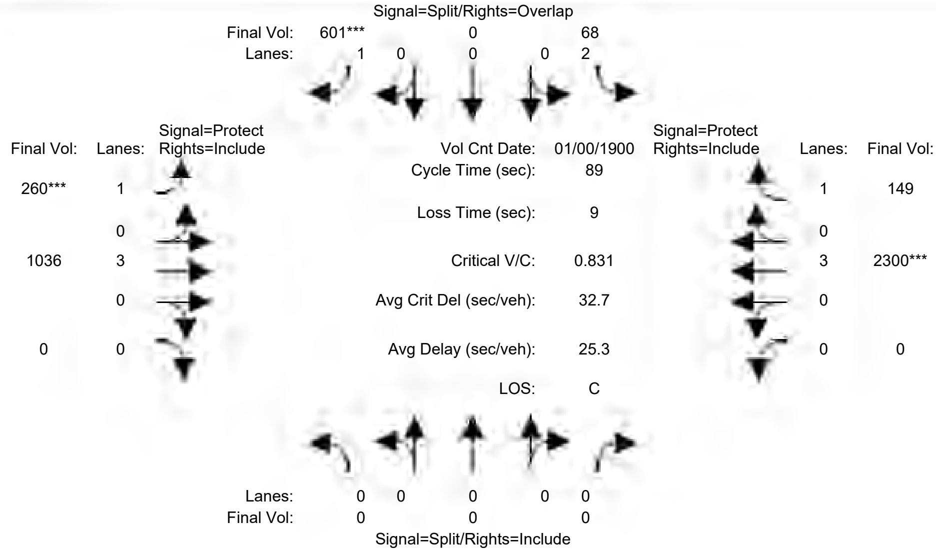
Street Name:	SR 85 Southbound Off-Ramp						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	25	0	25	0	54	0	0	54	0
Y+R:	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.8	4.0	4.0	5.8	4.0
Volume Module:												
Base Vol:	0	0	0	387	0	28	0	1770	0	0	1257	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	387	0	28	0	1770	0	0	1257	0
Added Vol:	0	0	0	0	0	0	0	16	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	387	0	28	0	1786	0	0	1271	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	387	0	28	0	1786	0	0	1271	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	387	0	28	0	1786	0	0	1271	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	387	0	28	0	1786	0	0	1271	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.02	0.00	0.47	0.00	0.00	0.33	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.63	0.00	0.00	0.63	0.00
Volume/Cap:	0.00	0.00	0.00	0.74	0.00	0.05	0.00	0.74	0.00	0.00	0.53	0.00
Delay/Veh:	0.0	0.0	0.0	34.0	0.0	22.5	0.0	12.6	0.0	0.0	9.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	34.0	0.0	22.5	0.0	12.6	0.0	0.0	9.2	0.0
LOS by Move:	A	A	A	C-	A	C+	A	B	A	A	A	A
HCM2kAvgQ:	0	0	0	12	0	1	0	16	0	0	9	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #17: Central Expy and Whisman Station Drive



Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	12	58	0	0	50	50
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Base Vol:	0	0	0	68	0	601	260	1036	0	0	2300	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	68	0	601	260	1036	0	0	2300	149
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	68	0	601	260	1036	0	0	2300	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	68	0	601	260	1036	0	0	2300	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	68	0	601	260	1036	0	0	2300	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	68	0	601	260	1036	0	0	2300	149

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.34	0.15	0.18	0.00	0.00	0.40	0.09
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.19	0.00	0.34	0.15	0.71	0.00	0.00	0.56	0.56
Volume/Cap:	0.00	0.00	0.00	0.11	0.00	1.02	1.02	0.26	0.00	0.00	0.72	0.15
Delay/Veh:	0.0	0.0	0.0	29.8	0.0	71.4	99.3	4.7	0.0	0.0	15.1	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.8	0.0	71.4	99.3	4.7	0.0	0.0	15.1	9.4
LOS by Move:	A	A	A	C	A	E	F	A	A	A	B	A
HCM2kAvgQ:	0	0	0	1	0	26	11	3	0	0	15	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #17: Central Expy and Whisman Station Drive

Signal=Split/Rights=Overlap
Final Vol: 284 0 134***
Lanes: 1 0 0 0 2

Signal=Protect Rights=Include
Final Vol: 366*** 1781 0
Lanes: 1 0 3 0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 98
Loss Time (sec): 9
Critical V/C: 0.532
Avg Crit Del (sec/veh): 19.6
Avg Delay (sec/veh): 10.9
LOS: B+

Signal=Protect Rights=Include
Lanes: 1 0 3 0 0
Final Vol: 167 1318*** 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	11	0	11	16	64	0	0	54	54
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	134	0	284	366	1781	0	0	1318	167
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	134	0	284	366	1781	0	0	1318	167
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	134	0	284	366	1781	0	0	1318	167
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	134	0	284	366	1781	0	0	1318	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	134	0	284	366	1781	0	0	1318	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	134	0	284	366	1781	0	0	1318	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.16	0.21	0.31	0.00	0.00	0.23	0.10
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.36	0.24	0.80	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.45	0.85	0.39	0.00	0.00	0.42	0.17
Delay/Veh:	0.0	0.0	0.0	41.0	0.0	24.7	50.6	0.1	0.0	0.0	8.8	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	41.0	0.0	24.7	50.6	0.1	0.0	0.0	8.8	7.5
LOS by Move:	A	A	A	D	A	C	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	3	0	7	11	0	0	0	5	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #17: Central Expy and Whisman Station Drive

Signal=Split/Rights=Overlap
Final Vol: 606*** 0 68
Lanes: 1 0 0 0 2

Final Vol: Lanes: Signal=Protect Rights=Include
258*** 1
0
1052 3
0
0 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 89
Loss Time (sec): 9
Critical V/C: 0.836
Avg Crit Del (sec/veh): 33.4
Avg Delay (sec/veh): 25.8
LOS: C

Signal=Protect Rights=Include Lanes: Final Vol:
1 149
0
3 2311***
0
0 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

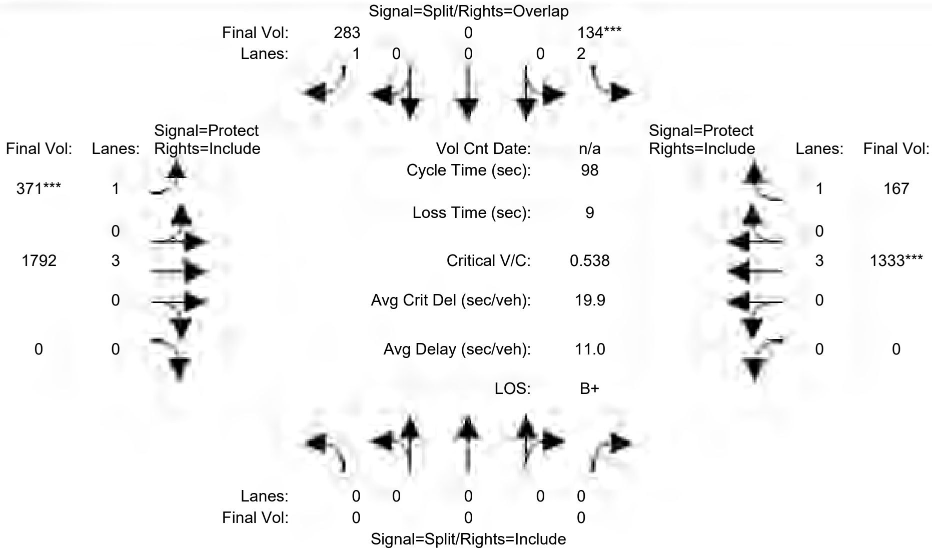
Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	12	58	0	0	50	50
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	68	0	601	260	1036	0	0	2300	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	68	0	601	260	1036	0	0	2300	149
Added Vol:	0	0	0	0	0	5	-2	16	0	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	68	0	606	258	1052	0	0	2311	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	68	0	606	258	1052	0	0	2311	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	68	0	606	258	1052	0	0	2311	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	68	0	606	258	1052	0	0	2311	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.35	0.15	0.18	0.00	0.00	0.41	0.09
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.19	0.00	0.34	0.14	0.71	0.00	0.00	0.56	0.56
Volume/Cap:	0.00	0.00	0.00	0.11	0.00	1.03	1.03	0.26	0.00	0.00	0.72	0.15
Delay/Veh:	0.0	0.0	0.0	29.7	0.0	73.7	102.1	4.8	0.0	0.0	15.2	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.7	0.0	73.7	102.1	4.8	0.0	0.0	15.2	9.4
LOS by Move:	A	A	A	C	A	E	F	A	A	A	B	A
HCM2kAvgQ:	0	0	0	1	0	26	11	3	0	0	15	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #17: Central Expy and Whisman Station Drive



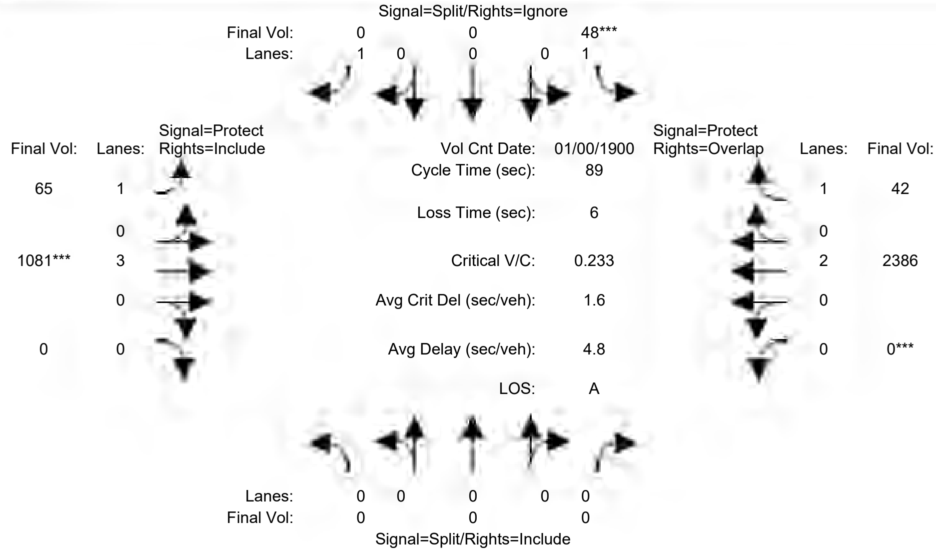
Street Name:	Whisman Station Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	11	0	11	16	64	0	0	54	54
Y+R:	4.0	4.0	4.0	5.8	4.0	5.8	4.7	5.8	4.0	4.0	5.8	5.8
Volume Module:												
Base Vol:	0	0	0	134	0	284	366	1781	0	0	1318	167
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	134	0	284	366	1781	0	0	1318	167
Added Vol:	0	0	0	0	0	-1	5	11	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	134	0	283	371	1792	0	0	1333	167
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	134	0	283	371	1792	0	0	1333	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	134	0	283	371	1792	0	0	1333	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	134	0	283	371	1792	0	0	1333	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3150	0	1750	1750	5700	0	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.16	0.21	0.31	0.00	0.00	0.23	0.10
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.36	0.24	0.80	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.45	0.87	0.39	0.00	0.00	0.42	0.17
Delay/Veh:	0.0	0.0	0.0	41.0	0.0	24.7	52.1	0.1	0.0	0.0	8.9	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	41.0	0.0	24.7	52.1	0.1	0.0	0.0	8.9	7.5
LOS by Move:	A	A	A	D	A	C	D-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	3	0	7	12	0	0	0	5	2

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #18: Central Expy and Ferguson Drive



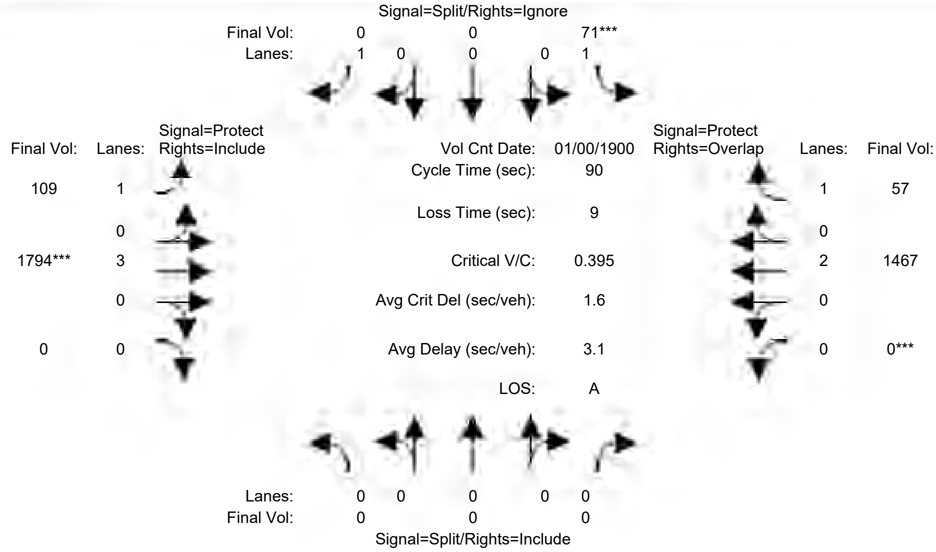
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	8	0	8	8	70	0	0	57	57
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	48	0	143	65	1081	0	0	2386	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	48	0	143	65	1081	0	0	2386	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	48	0	143	65	1081	0	0	2386	42
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	48	0	0	65	1081	0	0	2386	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	48	0	0	65	1081	0	0	2386	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	48	0	0	65	1081	0	0	2386	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.00	0.04	0.19	0.00	0.00	0.63	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.12	0.00	0.00	0.10	0.81	0.00	0.00	0.71	0.83
Volume/Cap:	0.00	0.00	0.00	0.23	0.00	0.00	0.37	0.23	0.00	0.00	0.88	0.03
Delay/Veh:	0.0	0.0	0.0	36.2	0.0	0.0	38.7	0.0	0.0	0.0	5.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.2	0.0	0.0	38.7	0.0	0.0	0.0	5.5	0.0
LOS by Move:	A	A	A	D+	A	A	D+	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	0	2	0	0	0	12	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #18: Central Expy and Ferguson Drive



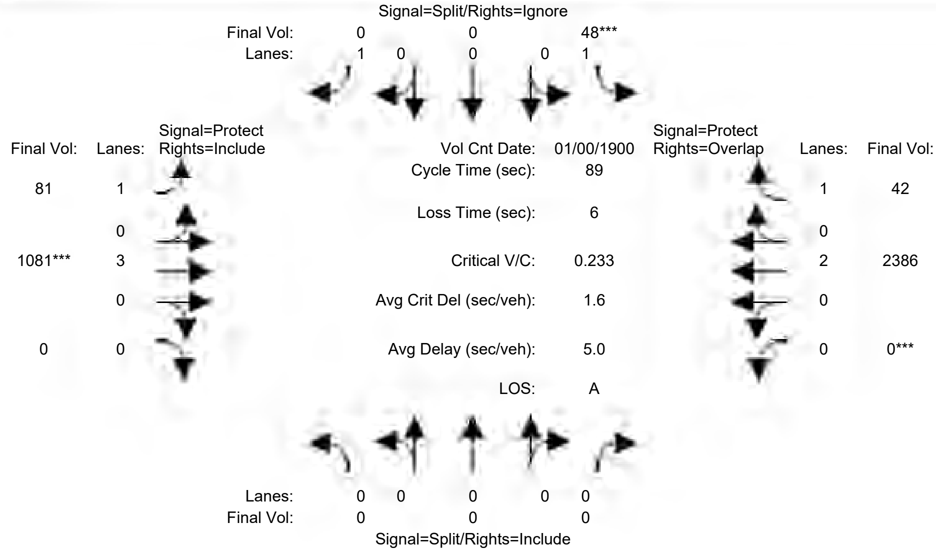
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	0	7	8	72	0	0	59	59
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	71	0	98	109	1794	0	0	1467	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	71	0	98	109	1794	0	0	1467	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	71	0	98	109	1794	0	0	1467	57
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	71	0	0	109	1794	0	0	1467	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	71	0	0	109	1794	0	0	1467	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	71	0	0	109	1794	0	0	1467	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.06	0.31	0.00	0.00	0.39	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.80
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.00	0.65	0.39	0.00	0.00	0.55	0.04
Delay/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	48.1	0.1	0.0	0.0	1.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	48.1	0.1	0.0	0.0	1.8	0.0
LOS by Move:	A	A	A	D	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	0	3	1	0	0	3	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #18: Central Expy and Ferguson Drive



Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	8	0	8	8	70	0	0	57	57
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	0	0	0	48	0	143	65	1081	0	0	2386	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	48	0	143	65	1081	0	0	2386	42
Added Vol:	0	0	0	0	0	11	16	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	48	0	154	81	1081	0	0	2386	42
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	48	0	0	81	1081	0	0	2386	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	48	0	0	81	1081	0	0	2386	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	48	0	0	81	1081	0	0	2386	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.00	0.05	0.19	0.00	0.00	0.63	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.12	0.00	0.00	0.10	0.81	0.00	0.00	0.71	0.83
Volume/Cap:	0.00	0.00	0.00	0.23	0.00	0.00	0.46	0.23	0.00	0.00	0.88	0.03
Delay/Veh:	0.0	0.0	0.0	36.2	0.0	0.0	39.7	0.0	0.0	0.0	5.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.2	0.0	0.0	39.7	0.0	0.0	0.0	5.5	0.0
LOS by Move:	A	A	A	D+	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	0	2	0	0	0	12	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #18: Central Expy and Ferguson Drive

Signal=Split/Rights=Ignore
Final Vol: 0 0 71***
Lanes: 1 0 0 0 1

Signal=Protect
Rights=Include

Final Vol: Lanes:
120 1
0
1794*** 3
0
0 0

Vol Cnt Date: n/a
Cycle Time (sec): 90
Loss Time (sec): 9
Critical V/C: 0.395
Avg Crit Del (sec/veh): 1.6
Avg Delay (sec/veh): 3.4
LOS: A

Signal=Protect
Rights=Overlap

Lanes: Final Vol:
1 57
0
2 1467
0
0 0***

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Split/Rights=Include

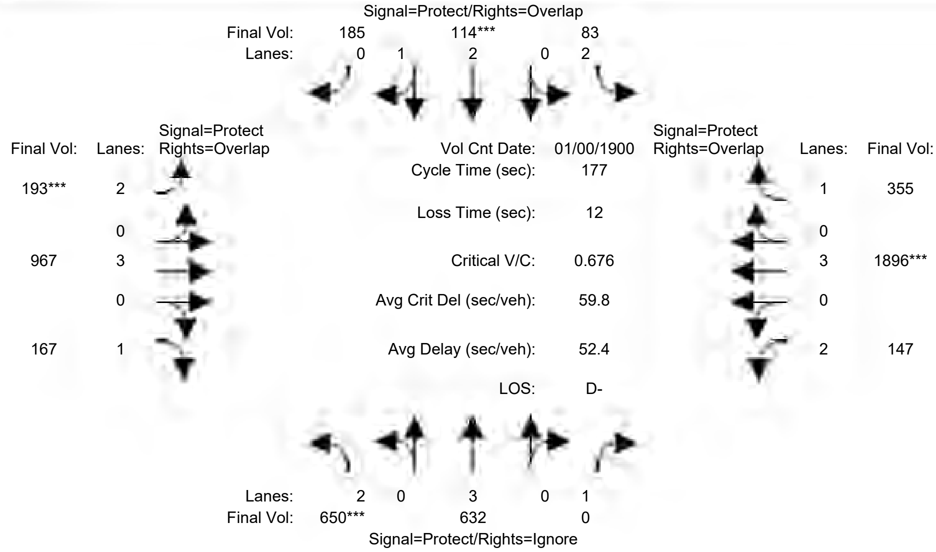
Street Name:	Ferguson Drive						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	0	7	8	72	0	0	59	59
Y+R:	4.0	4.0	4.0	4.6	4.0	4.6	4.8	5.8	4.0	4.0	5.8	5.8
Volume Module:												
Base Vol:	0	0	0	71	0	98	109	1794	0	0	1467	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	71	0	98	109	1794	0	0	1467	57
Added Vol:	0	0	0	0	0	15	11	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	71	0	113	120	1794	0	0	1467	57
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	71	0	0	120	1794	0	0	1467	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	71	0	0	120	1794	0	0	1467	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	71	0	0	120	1794	0	0	1467	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1750	0	1750	1750	5700	0	0	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.07	0.31	0.00	0.00	0.39	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.80	0.00	0.00	0.70	0.80
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.00	0.72	0.39	0.00	0.00	0.55	0.04
Delay/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	53.5	0.1	0.0	0.0	1.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.5	0.0	0.0	53.5	0.1	0.0	0.0	1.8	0.0
LOS by Move:	A	A	A	D	A	A	D-	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	0	4	1	0	0	3	0

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #20: Central Expy and Mary Avenue



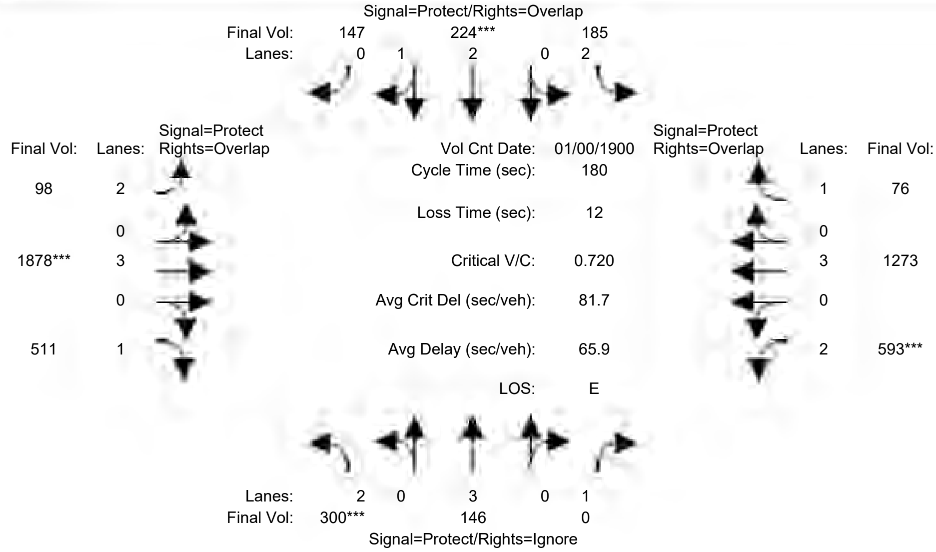
Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	36	58	58	9	31	31	14	68	68	18	72	72
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	650	632	530	83	114	185	193	967	167	147	1896	355
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	650	632	530	83	114	185	193	967	167	147	1896	355
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	650	632	530	83	114	185	193	967	167	147	1896	355
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	650	632	0	83	114	185	193	967	167	147	1896	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	650	632	0	83	114	185	193	967	167	147	1896	355
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	650	632	0	83	114	185	193	967	167	147	1896	355
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.11	0.00	0.03	0.03	0.11	0.06	0.17	0.10	0.05	0.33	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.38	0.00	0.06	0.18	0.25	0.08	0.39	0.65	0.10	0.42	0.48
Volume/Cap:	0.79	0.29	0.00	0.45	0.17	0.42	0.77	0.43	0.15	0.45	0.79	0.43
Delay/Veh:	66.6	38.8	0.0	82.3	62.1	55.4	94.0	44.5	17.9	75.5	53.6	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.6	38.8	0.0	82.3	62.1	55.4	94.0	44.5	17.9	75.5	53.6	37.2
LOS by Move:	E	D+	A	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	20	8	0	3	3	9	8	14	6	5	32	16

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #20: Central Expy and Mary Avenue



Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	47	47	17	45	45	11	47	47	45	81	81
Y+R:	6.2	5.9	5.9	6.1	6.0	6.0	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	300	146	640	185	224	147	98	1878	511	593	1273	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	146	640	185	224	147	98	1878	511	593	1273	76
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	146	640	185	224	147	98	1878	511	593	1273	76
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	146	0	185	224	147	98	1878	511	593	1273	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	146	0	185	224	147	98	1878	511	593	1273	76
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	146	0	185	224	147	98	1878	511	593	1273	76
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.00	0.06	0.06	0.08	0.03	0.33	0.29	0.19	0.22	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.26	0.00	0.09	0.25	0.32	0.07	0.33	0.43	0.25	0.51	0.60
Volume/Cap:	0.90	0.10	0.00	0.62	0.24	0.26	0.45	1.01	0.67	0.75	0.44	0.07
Delay/Veh:	105.9	50.5	0.0	82.4	53.9	45.7	82.0	87.5	50.0	68.6	35.1	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.9	50.5	0.0	82.4	53.9	45.7	82.0	87.5	50.0	68.6	35.1	20.8
LOS by Move:	F	D	A	F	D-	D	F	F	D	E	D+	C+
HCM2kAvgQ:	11	2	0	7	5	6	4	40	26	20	17	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #20: Central Expy and Mary Avenue

Signal=Protect/Rights=Overlap
Final Vol: 185 116*** 83
Lanes: 0 1 2 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Overlap			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	177			
193***	2					1	355
			Loss Time (sec):	12			
	0					0	
985	3		Critical V/C:	0.679		3	1902***
	0		Avg Crit Del (sec/veh):	59.9		0	
167	1		Avg Delay (sec/veh):	52.4		2	147
			LOS:	D-			

Lanes: 2 0 3 0 1
Final Vol: 653*** 644 0
Signal=Protect/Rights=Ignore

Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	36	58	58	9	31	31	14	68	68	18	72	72
Y+R:	6.1	6.0	6.0	6.2	5.9	5.9	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	650	632	530	83	114	185	193	967	167	147	1896	355
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	650	632	530	83	114	185	193	967	167	147	1896	355
Added Vol:	3	12	0	0	2	0	0	18	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	653	644	530	83	116	185	193	985	167	147	1902	355
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	653	644	0	83	116	185	193	985	167	147	1902	355
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	653	644	0	83	116	185	193	985	167	147	1902	355
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	653	644	0	83	116	185	193	985	167	147	1902	355
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.11	0.00	0.03	0.03	0.11	0.06	0.17	0.10	0.05	0.33	0.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.26	0.38	0.00	0.06	0.18	0.25	0.08	0.39	0.65	0.10	0.42	0.48
Volume/Cap:	0.80	0.30	0.00	0.45	0.17	0.42	0.77	0.44	0.15	0.45	0.80	0.43
Delay/Veh:	66.7	38.9	0.0	82.3	62.2	55.4	94.0	44.7	17.9	75.5	53.8	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.7	38.9	0.0	82.3	62.2	55.4	94.0	44.7	17.9	75.5	53.8	37.2
LOS by Move:	E	D+	A	F	E	E+	F	D	B	E-	D-	D+
HCM2kAvgQ:	20	8	0	3	3	9	8	14	6	5	32	16

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #20: Central Expy and Mary Avenue

Signal=Protect/Rights=Overlap
Final Vol: 147 232*** 185
Lanes: 0 1 2 0 2

Final Vol: Lanes: Signal=Protect Rights=Overlap
98 2
0
1889*** 3
0
512 1

Vol Cnt Date: n/a
Cycle Time (sec): 180
Loss Time (sec): 12
Critical V/C: 0.724
Avg Crit Del (sec/veh): 82.6
Avg Delay (sec/veh): 66.4
LOS: E

Signal=Protect Rights=Overlap Lanes: Final Vol:
1 76
0
3 1286
0
2 593***

Lanes: 2 0 3 0 1
Final Vol: 300*** 148 0
Signal=Protect/Rights=Ignore

Street Name:	Mary Avenue						Central Expy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	47	47	17	45	45	11	47	47	45	81	81
Y+R:	6.2	5.9	5.9	6.1	6.0	6.0	6.2	6.2	6.2	6.3	6.2	6.2
Volume Module:												
Base Vol:	300	146	640	185	224	147	98	1878	511	593	1273	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	146	640	185	224	147	98	1878	511	593	1273	76
Added Vol:	0	2	0	0	8	0	0	11	1	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	148	640	185	232	147	98	1889	512	593	1286	76
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	148	0	185	232	147	98	1889	512	593	1286	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	148	0	185	232	147	98	1889	512	593	1286	76
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	148	0	185	232	147	98	1889	512	593	1286	76
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.00	0.06	0.06	0.08	0.03	0.33	0.29	0.19	0.23	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.26	0.00	0.09	0.25	0.32	0.07	0.33	0.43	0.25	0.51	0.60
Volume/Cap:	0.90	0.10	0.00	0.62	0.24	0.26	0.45	1.01	0.68	0.75	0.44	0.07
Delay/Veh:	105.9	50.5	0.0	82.4	54.0	45.7	82.0	89.0	50.1	68.6	35.2	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.9	50.5	0.0	82.4	54.0	45.7	82.0	89.0	50.1	68.6	35.2	20.8
LOS by Move:	F	D	A	F	D-	D	F	F	D	E	D+	C+
HCM2kAvgQ:	11	2	0	7	5	6	4	41	27	20	17	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #21: SR 237-Grant Rd and El Camino Real

Signal=Protect/Rights=Include
Final Vol: 1002*** 1171 331
Lanes: 1 0 3 0 2

Westbound: Signal=Protect Rights=Include

Final Vol:	Lanes:		Lanes:	Final Vol:
764***	2		0	17
	0		1	
1298	2		2	1363***
	1		0	
67	0		2	502

Eastbound: Signal=Protect Rights=Include

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 170
Loss Time (sec): 12
Critical V/C: 1.184
Avg Crit Del (sec/veh): 164.7
Avg Delay (sec/veh): 102.9
LOS: F

Lanes: 2 0 3 0 1
Final Vol: 135*** 1095 467
Signal=Protect/Rights=Include

Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

Base Vol:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.84	0.16	2.00	2.96	0.04
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5398	279	3150	5624	70

Capacity Analysis Module:

Vol/Sat:	0.04	0.19	0.27	0.11	0.21	0.57	0.24	0.24	0.24	0.16	0.24	0.24
Crit Moves:	****					****	****				****	
Green/Cycle:	0.06	0.38	0.38	0.15	0.47	0.47	0.20	0.24	0.24	0.16	0.20	0.20
Volume/Cap:	0.73	0.50	0.70	0.70	0.44	1.21	1.21	1.00	1.00	1.00	1.21	1.21
Delay/Veh:	92.3	40.6	47.9	73.4	30.0	152.6	178.8	89.4	89.4	112.1	173	172.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.3	40.6	47.9	73.4	30.0	152.6	178.8	89.4	89.4	112.1	173	172.9
LOS by Move:	F	D	D	E	C	F	F	F	F	F	F	F
HCM2kAvgQ:	6	14	22	11	13	80	36	29	29	19	34	34

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #21: SR 237-Grant Rd and El Camino Real

Signal=Protect/Rights=Include
Final Vol: 719 1022 366***
Lanes: 1 0 3 0 2

Signal=Protect
Rights=Include

Final Vol:	Lanes:
886	2
	0
1902***	2
	1
76	0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 170
Loss Time (sec): 12
Critical V/C: 1.090
Avg Crit Del (sec/veh): 119.2
Avg Delay (sec/veh): 95.8
LOS: F

Signal=Protect
Rights=Include

Lanes:	Final Vol:
0	23
1	
2	1228
0	
2	543***

Lanes: 2 0 3 0 1
Final Vol: 190 1361 650***
Signal=Protect/Rights=Include

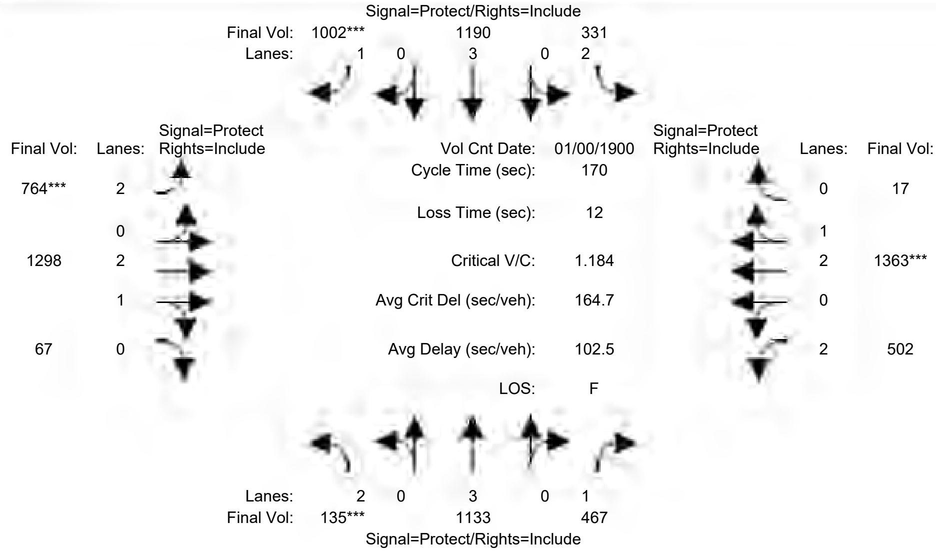
Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95	0.83	0.98	0.95
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	0.12	2.00	2.94	0.06
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5385	215	3150	5497	103
Capacity Analysis Module:												
Vol/Sat:	0.06	0.24	0.37	0.12	0.18	0.41	0.28	0.35	0.35	0.17	0.22	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.34	0.34	0.11	0.39	0.39	0.27	0.32	0.32	0.16	0.21	0.21
Volume/Cap:	1.05	0.70	1.09	1.09	0.46	1.05	1.05	1.09	1.09	1.09	1.05	1.05
Delay/Veh:	162.0	49.7	119.8	151.4	38.7	101.2	106.0	108	107.7	138.6	106	106.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	162.0	49.7	119.8	151.4	38.7	101.2	106.0	108	107.7	138.6	106	106.0
LOS by Move:	F	D	F	F	D+	F	F	F	F	F	F	F
HCM2kAvgQ:	10	21	47	17	13	50	35	45	45	22	27	27

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #21: SR 237-Grant Rd and El Camino Real



Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	1095	467	331	1171	1002	764	1298	67	502	1363	17
Added Vol:	0	38	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	1133	467	331	1190	1002	764	1298	67	502	1363	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	1133	467	331	1190	1002	764	1298	67	502	1363	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	1133	467	331	1190	1002	764	1298	67	502	1363	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	1133	467	331	1190	1002	764	1298	67	502	1363	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.84	0.16	2.00	2.96	0.04
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5398	279	3150	5624	70
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.27	0.11	0.21	0.57	0.24	0.24	0.24	0.16	0.24	0.24
Crit Moves:	****					****	****				****	
Green/Cycle:	0.06	0.38	0.38	0.15	0.47	0.47	0.20	0.24	0.24	0.16	0.20	0.20
Volume/Cap:	0.73	0.52	0.70	0.70	0.44	1.21	1.21	1.00	1.00	1.00	1.21	1.21
Delay/Veh:	92.3	41.0	47.9	73.4	30.1	152.6	178.8	89.4	89.4	112.1	173	172.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.3	41.0	47.9	73.4	30.1	152.6	178.8	89.4	89.4	112.1	173	172.9
LOS by Move:	F	D	D	E	C	F	F	F	F	F	F	F
HCM2kAvgQ:	6	15	22	11	13	80	36	29	29	19	34	34

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #21: SR 237-Grant Rd and El Camino Real

Signal=Protect/Rights=Include
Final Vol: 719 1050 366***
Lanes: 1 0 3 0 2

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
886	2		Cycle Time (sec):	170		0	23
			Loss Time (sec):	12			
	0					1	
1902***	2		Critical V/C:	1.085		2	1228
	1		Avg Crit Del (sec/veh):	117.3		0	
76	0		Avg Delay (sec/veh):	94.4		2	543***
			LOS:	F			

Lanes: 2 0 3 0 1
Final Vol: 190 1378 650***
Signal=Protect/Rights=Include

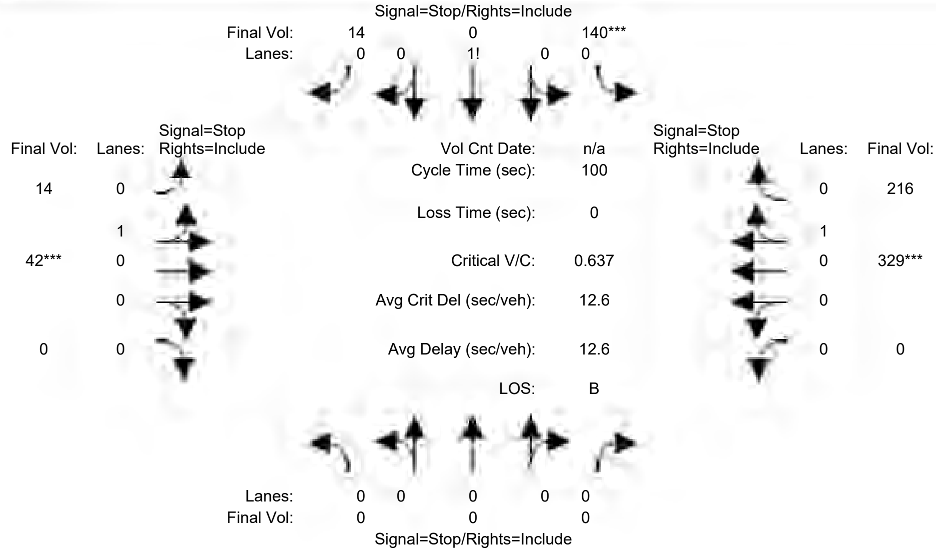
Street Name:	SR 237-Grant Rd						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	20	0	10	20	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	1361	650	366	1022	719	886	1902	76	543	1228	23
Added Vol:	0	17	0	0	28	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	1378	650	366	1050	719	886	1902	76	543	1228	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	1378	650	366	1050	719	886	1902	76	543	1228	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	1378	650	366	1050	719	886	1902	76	543	1228	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	1378	650	366	1050	719	886	1902	76	543	1228	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	0.12	2.00	2.94	0.06
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5463	218	3150	5586	105
Capacity Analysis Module:												
Vol/Sat:	0.06	0.24	0.37	0.12	0.18	0.41	0.28	0.35	0.35	0.17	0.22	0.22
Crit Moves:			****	****				****		****		
Green/Cycle:	0.06	0.34	0.34	0.11	0.39	0.39	0.27	0.32	0.32	0.16	0.21	0.21
Volume/Cap:	1.05	0.71	1.08	1.08	0.47	1.05	1.04	1.08	1.08	1.08	1.04	1.04
Delay/Veh:	160.2	49.7	117.7	149.4	38.7	99.3	105.1	106	105.9	136.6	105	105.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	160.2	49.7	117.7	149.4	38.7	99.3	105.1	106	105.9	136.6	105	105.4
LOS by Move:	F	D	F	F	D+	F	F	F	F	F	F	F
HCM2kAvgQ:	10	21	47	17	13	49	35	44	44	22	26	26

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background AM

Intersection #149: Clyde Ave/Maude Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	140	0	14	14	42	0	0	329	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	140	0	14	14	42	0	0	329	216
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	140	0	14	14	42	0	0	329	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	140	0	14	14	42	0	0	329	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	140	0	14	14	42	0	0	329	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	140	0	14	14	42	0	0	329	216
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.91	0.00	0.09	0.25	0.75	0.00	0.00	0.60	0.40
Final Sat.:	0	0	0	576	0	58	175	525	0	0	517	339
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.24	xxxx	0.24	0.08	0.08	xxxx	xxxx	0.64	0.64
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	9.8	0.0	9.8	8.3	8.3	0.0	0.0	13.8	13.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	9.8	0.0	9.8	8.3	8.3	0.0	0.0	13.8	13.8
LOS by Move:	*	*	*	A	*	A	A	A	*	*	B	B
ApproachDel:		xxxxxx			9.8			8.3			13.8	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			9.8			8.3			13.8	
LOS by Appr:		*			A			A			B	
AllWayAvgQ:	0.0	0.0	0.0	0.3	0.3	0.3	0.1	0.1	0.1	1.6	1.6	1.6

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

Future Volume Alternative: Peak Hour Warrant NOT Met

```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   140    0    14    14   42     0     0  329   216
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            601
Minor Approach Volume:          154
Minor Approach Volume Threshold: 355
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PM

Intersection #149: Clyde Ave/Maude Ave

Signal=Stop/Rights=Include
Final Vol: 6 0 155***
Lanes: 0 0 1! 0 0

Final Vol: | Lanes: | Signal=Stop Rights=Include
9 | 0
 | 1
148*** | 0
 | 0
0 | 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.241
Avg Crit Del (sec/veh): 8.7
Avg Delay (sec/veh): 8.7
LOS: A

Signal=Stop Rights=Include | Lanes: | Final Vol:
 | 0 | 133
 | 1 |
 | 0 | 73***
 | 0 |
 | 0 | 0

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Stop/Rights=Include

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   155    0     6     9  148     0     0   73   133
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   155    0     6     9  148     0     0   73   133
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   155    0     6     9  148     0     0   73   133
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   155    0     6     9  148     0     0   73   133
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   155    0     6     9  148     0     0   73   133
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   155    0     6     9  148     0     0   73   133
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  0.96 0.00  0.04  0.06 0.94  0.00  0.00 0.35  0.65
Final Sat.:     0    0     0   684    0    26    44  727     0     0  302   551
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx xxxx  xxxx  0.23 xxxx  0.23  0.20 0.20  xxxx  xxxx 0.24  0.24
Crit Moves:                   ****                  ****                  ****
Delay/Veh:    0.0  0.0   0.0   9.1  0.0   9.1   8.6  8.6   0.0   0.0  8.3   8.3
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0   9.1  0.0   9.1   8.6  8.6   0.0   0.0  8.3   8.3
LOS by Move:    *    *     *     A    *     A     A    A     *     *    A     A
ApproachDel:    xxxxxx             9.1              8.6              8.3
Delay Adj:       xxxxx            1.00             1.00             1.00
ApprAdjDel:     xxxxxx             9.1              8.6              8.3
LOS by Appr:         *               A                A                A
AllWayAvgQ:   0.0  0.0   0.0   0.3  0.3   0.3   0.2  0.2   0.2   0.3  0.3   0.3
Note: Queue reported is the number of cars per lane.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #149 Clyde Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
```

```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   155    0     6     9  148     0     0   73   133
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            363
Minor Approach Volume:          161
Minor Approach Volume Threshold: 490
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PP AM

Intersection #149: Clyde Ave/Maude Ave

Signal=Stop/Rights=Include
Final Vol: 27 0 178***
Lanes: 0 0 1! 0 0

West side: Signal=Stop, Rights=Include — Final Vol: 88, 161***, 0; Lanes: 0, 1, 0, 0, 0

East side: Signal=Stop, Rights=Include — Final Vol: 483, 265***, 0; Lanes: 0, 1, 0, 0, 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.937
Avg Crit Del (sec/veh): 28.4
Avg Delay (sec/veh): 28.4
LOS: D

Lanes: 0 0 0 0 0
Final Vol: 0 0 0
Signal=Stop/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	140	0	14	14	42	0	0	329	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	140	0	14	14	42	0	0	329	216
Added Vol:	0	0	0	38	0	13	74	119	0	0	-64	267
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	178	0	27	88	161	0	0	265	483
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	178	0	27	88	161	0	0	265	483
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	178	0	27	88	161	0	0	265	483
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	178	0	27	88	161	0	0	265	483
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.87	0.00	0.13	0.35	0.65	0.00	0.00	0.35	0.65
Final Sat.:	0	0	0	496	0	75	227	416	0	0	283	515
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.36	xxxx	0.36	0.39	0.39	xxxx	xxxx	0.94	0.94
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	12.3	0.0	12.3	11.7	11.7	0.0	0.0	38.4	38.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.3	0.0	12.3	11.7	11.7	0.0	0.0	38.4	38.4
LOS by Move:	*	*	*	B	*	B	B	B	*	*	E	E
ApproachDel:		xxxxxx			12.3			11.7			38.4	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			12.3			11.7			38.4	
LOS by Appr:		*			B			B			E	
AllWayAvgQ:	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.6	6.9	6.9	6.9

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #149 Clyde Ave/Maude Ave

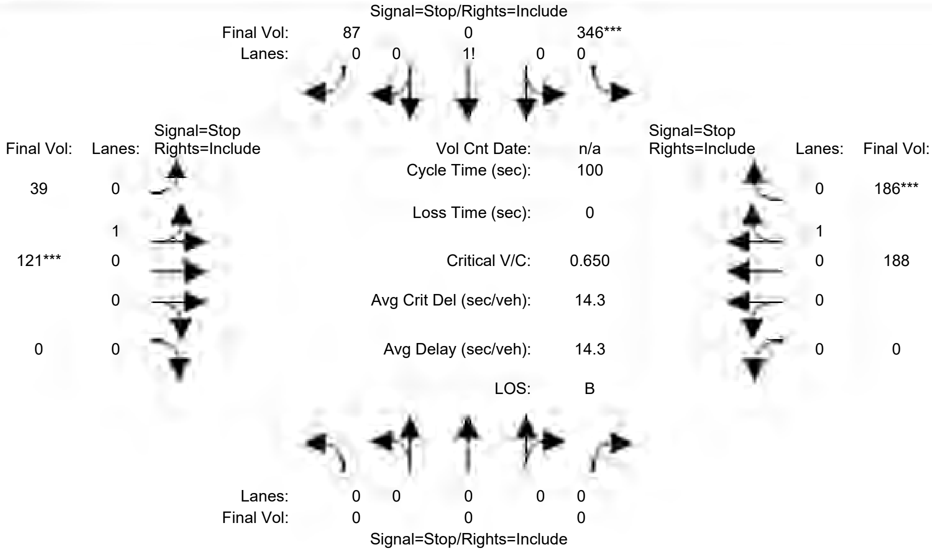
Future Volume Alternative: Peak Hour Warrant NOT Met

```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   178    0    27    88  161     0     0  265   483
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            997
Minor Approach Volume:          205
Minor Approach Volume Threshold: 220
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Background PP PM

Intersection #149: Clyde Ave/Maude Ave



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	155	0	6	9	148	0	0	73	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	155	0	6	9	148	0	0	73	133
Added Vol:	0	0	0	191	0	79	30	-27	0	0	117	51
PasserByVol:	0	0	0	0	0	2	0	0	0	0	-2	2
Initial Fut:	0	0	0	346	0	87	39	121	0	0	188	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	346	0	87	39	121	0	0	188	186
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	346	0	87	39	121	0	0	188	186
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	346	0	87	39	121	0	0	188	186
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.80	0.00	0.20	0.24	0.76	0.00	0.00	0.50	0.50
Final Sat.:	0	0	0	533	0	134	146	452	0	0	346	343
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.65	xxxx	0.65	0.27	0.27	xxxx	xxxx	0.54	0.54
Crit Moves:				****				****				****
Delay/Veh:	0.0	0.0	0.0	16.7	0.0	16.7	10.5	10.5	0.0	0.0	13.3	13.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.7	0.0	16.7	10.5	10.5	0.0	0.0	13.3	13.3
LOS by Move:	*	*	*	C	*	C	B	B	*	*	B	B
ApproachDel:		xxxxxx			16.7			10.5			13.3	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			16.7			10.5			13.3	
LOS by Appr:		*			C			B			B	
AllWayAvgQ:	0.0	0.0	0.0	1.6	1.6	1.6	0.3	0.3	0.3	1.0	1.0	1.0

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #149 Clyde Ave/Maude Ave

****

Future Volume Alternative: Peak Hour Warrant Met


```
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  0  0  0    0  0  0  1  0
Initial Vol:    0    0     0   346    0    87    39  121     0     0  188   186
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            534
Minor Approach Volume:          433
Minor Approach Volume Threshold: 387
--------------------------------------------------------------------------------
```

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background AM

Intersection #150: Logue Ave/Maude Ave

```
                     Signal=Uncontrol/Rights=Include
          Final Vol:      0          23          11
              Lanes:      0    0     1!     0    0

        Signal=Stop                                      Signal=Yield
Final Vol: Lanes: Rights=Include  Vol Cnt Date:    n/a   Rights=Include  Lanes: Final Vol:
                                  Cycle Time (sec): 100
   0        0                                                          0       23
                                  Loss Time (sec):   0
            0                                                          0
   0        1!                    Critical V/C:    0.303               1!      0
            0                     Avg Crit Del (sec/veh): 8.6          0
   0        0                     Avg Delay (sec/veh):    8.6          0      276
                                  LOS:               B

              Lanes:      0    0     1!     0    0
          Final Vol:      6          11          39
                     Signal=Uncontrol/Rights=Include
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6    11    39    11    23     0     0     0     0   276     0    23
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    6    11    39    11    23     0     0     0     0   276     0    23
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    6    11    39    11    23     0     0     0     0   276     0    23
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     6    11    39    11    23     0     0     0     0   276     0    23
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:    6    11    39    11    23     0     0     0     0   276     0    23
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   6.4  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   23 xxxx xxxxx    50 xxxx xxxxx    99  107    23    88   88    31
Potent Cap.: 1605 xxxx xxxxx  1570 xxxx xxxxx   888  787  1060   918  806  1050
Move Cap.:   1605 xxxx xxxxx  1570 xxxx xxxxx   861  778  1060   911  798  1050
Volume/Cap:  0.00 xxxx  xxxx  0.01 xxxx  xxxx  0.00 0.00  0.00  0.30 0.00  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx  920 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  1.4 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.8 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx           10.8
ApproachLOS:        *                *                *                B
Note: Queue reported is the number of cars per lane.
                    Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #150 Logue Ave/Maude Ave
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```



```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign       Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   11    39    11   23     0     0    0     0   276    0    23
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              10.8
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.9]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=299]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=389]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign       Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   11    39    11   23     0     0    0     0   276    0    23
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            90
Minor Approach Volume:          299
Minor Approach Volume Threshold: 862
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include

Final Vol:	0		14		14
Lanes:	0	0	1!	0	0

West approach: Signal=Stop, Rights=Include. East approach: Signal=Yield, Rights=Include.

Final Vol:	Lanes:				Lanes:	Final Vol:
0	0				0	11
	0				0	
3	1!	Critical V/C:	0.077		1!	0
	0				0	
0	0				0	65

Vol Cnt Date:	n/a
Cycle Time (sec):	100
Loss Time (sec):	0
Critical V/C:	0.077
Avg Crit Del (sec/veh):	3.5
Avg Delay (sec/veh):	3.5
LOS:	B

Lanes:	0	0	1!	0	0
Final Vol:	0		26		111

Signal=Uncontrol/Rights=Include

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   26   111    14   14     0     0    3     0    65    0    11
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   26   111    14   14     0     0    3     0    65    0    11
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0   26   111    14   14     0     0    3     0    65    0    11
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   26   111    14   14     0     0    3     0    65    0    11
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   26   111    14   14     0     0    3     0    65    0    11
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx  6.5 xxxxx   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx  4.0 xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   137 xxxx xxxxx  xxxx  179 xxxxx   125  124    82
Potent Cap.: xxxx xxxx xxxxx  1459 xxxx xxxxx  xxxx  718 xxxxx   854  771   984
Move Cap.:   xxxx xxxx xxxxx  1459 xxxx xxxxx  xxxx  711 xxxxx   845  763   984
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx 0.00  xxxx  0.08 0.00  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx  0.0 xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.5 xxxx xxxxx xxxxx 10.1 xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    B     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  862 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.6 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    A     *
ApproachDel:     xxxxxx           xxxxxx             10.1              9.6
ApproachLOS:        *                *                 B                A
Note: Queue reported is the number of cars per lane.
                        Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #150 Logue Ave/Maude Ave
*******************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```

```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L - T - R        L - T - R        L - T - R        L - T - R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:       0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:   0   26   111    14   14     0     0    3     0    65    0    11
ApproachDel:    xxxxxx           xxxxxx            10.1              9.6
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=244]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=76]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=244]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L - T - R        L - T - R        L - T - R        L - T - R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:       0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:   0   26   111    14   14     0     0    3     0    65    0    11
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            165
Minor Approach Volume:          76
Minor Approach Volume Threshold: 700
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PP AM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include
Final Vol: 0 26 17
Lanes: 0 0 1! 0 0

Signal=Stop
Rights=Include

Signal=Yield
Rights=Include

Final Vol:	Lanes:			Lanes:	Final Vol:
0	0	Vol Cnt Date:	n/a	0	56
	0	Cycle Time (sec):	100	0	
0	1!	Loss Time (sec):	0	1!	0
	0	Critical V/C:	0.444	0	
0	0	Avg Crit Del (sec/veh):	10.1	0	379
		Avg Delay (sec/veh):	10.1		
		LOS:	B		

Lanes: 0 0 1! 0 0
Final Vol: 6 24 79
Signal=Uncontrol/Rights=Include

```
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      6    11    39    11    23     0     0     0     0   276     0    23
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   6    11    39    11    23     0     0     0     0   276     0    23
Added Vol:     0    13    40     6     3     0     0     0     0   103     0    33
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   6    24    79    17    26     0     0     0     0   379     0    56
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    6    24    79    17    26     0     0     0     0   379     0    56
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
FinalVolume:   6    24    79    17    26     0     0     0     0   379     0    56
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   6.4  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   26 xxxx xxxxx   103 xxxx xxxxx   164  175    26   136  136    64
Potent Cap.: 1601 xxxx xxxxx  1502 xxxx xxxxx   806  722  1056   863  759  1007
Move Cap.:   1601 xxxx xxxxx  1502 xxxx xxxxx   752  711  1056   853  748  1007
Volume/Cap:  0.00 xxxx  xxxx  0.01 xxxx  xxxx  0.00 0.00  0.00  0.44 0.00  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx  870 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.9 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 13.2 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx             13.2
ApproachLOS:        *                *                *                 B
Note: Queue reported is the number of cars per lane.
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```



```
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   24    79    17   26     0     0    0     0   379    0    56
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              13.2
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=1.6]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=435]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=587]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  1! 0  0   0  1  0  0  0   0  0  1! 0  0   0  0  1! 0  0
Initial Vol:    6   24    79    17   26     0     0    0     0   379    0    56
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            152
Minor Approach Volume:          435
Minor Approach Volume Threshold: 722
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Background PP PM

Intersection #150: Logue Ave/Maude Ave

Signal=Uncontrol/Rights=Include
Final Vol: 0 21 27
Lanes: 0 0 1! 0 0

Signal=Stop Rights=Include (West approach)
Final Vol: 0, 3, 0
Lanes: 0, 0, 1!, 0, 0

Vol Cnt Date: n/a
Cycle Time (sec): 100
Loss Time (sec): 0
Critical V/C: 0.186
Avg Crit Del (sec/veh): 4.2
Avg Delay (sec/veh): 4.2
LOS: B

Signal=Yield Rights=Include (East approach)
Lanes: 0, 0, 1!, 0, 0
Final Vol: 14, 0, 136

Lanes: 0 0 1! 0 0
Final Vol: 0 27 226
Signal=Uncontrol/Rights=Include

```
Approach:       North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   26   111    14   14     0     0    3     0    65    0    11
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   26   111    14   14     0     0    3     0    65    0    11
Added Vol:      0    1   113    13    7     0     0    0     0    68    0     3
PasserByVol:    0    0     2     0    0     0     0    0     0     3    0     0
Initial Fut:    0   27   226    27   21     0     0    3     0   136    0    14
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   27   226    27   21     0     0    3     0   136    0    14
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   27   226    27   21     0     0    3     0   136    0    14
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx  6.5 xxxxx   7.1  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx  4.0 xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   253 xxxx xxxxx  xxxx  328 xxxxx   217  215   140
Potent Cap.: xxxx xxxx xxxxx  1324 xxxx xxxxx  xxxx  594 xxxxx   744  686   913
Move Cap.:   xxxx xxxx xxxxx  1324 xxxx xxxxx  xxxx  582 xxxxx   730  672   913
Volume/Cap:  xxxx xxxx  xxxx  0.02 xxxx  xxxx  xxxx 0.01  xxxx  0.19 0.00  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx  0.0 xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   7.8 xxxx xxxxx xxxxx 11.2 xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    B     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  744 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.8 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.1 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:     xxxxxx            xxxxxx              11.2              11.1
ApproachLOS:        *                 *                  B                 B
Note: Queue reported is the number of cars per lane.
                    Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
```

```
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   27   226    27   21     0     0    3     0   136    0    14
ApproachDel:    xxxxxx           xxxxxx              11.2             11.1
------------|---------------||---------------||---------------||---------------|
Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=454]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
Approach[westbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=150]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=454]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #150 Logue Ave/Maude Ave
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Yield Sign
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  1  0  0    0  0  1! 0  0
Initial Vol:    0   27   226    27   21     0     0    3     0   136    0    14
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            301
Minor Approach Volume:          150
Minor Approach Volume Threshold: 540
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1027: Moffett Boulevard and Middlefield Road

Signal=Protect/Rights=Include
Final Vol: 270*** 258 79
Lanes: 0 1 1 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Include	Lanes:	Final Vol:
			Vol Cnt Date:	01/00/1900			
			Cycle Time (sec):	120			
203***	1					0	81
			Loss Time (sec):	12			
	0					1	
413	1		Critical V/C:	0.606		1	741***
	1		Avg Crit Del (sec/veh):	38.4		0	
78	0		Avg Delay (sec/veh):	37.9		1	152
			LOS:	D+			

Lanes: 1 0 1 1 0
Final Vol: 99*** 408 113
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	99	408	113	79	258	270	203	413	78	152	741	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	408	113	79	258	270	203	413	78	152	741	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	408	113	79	258	270	203	413	78	152	741	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	408	113	79	258	270	203	413	78	152	741	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	408	113	79	258	270	203	413	78	152	741	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	408	113	79	258	270	203	413	78	152	741	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.54	0.46	1.00	1.00	1.00	1.00	1.66	0.34	1.00	1.79	0.21
Final Sat.:	1750	2922	809	1750	1900	1750	1750	3153	596	1750	3397	371
Capacity Analysis Module:												
Vol/Sat:	0.06	0.14	0.14	0.05	0.14	0.15	0.12	0.13	0.13	0.09	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.09	0.25	0.25	0.10	0.25	0.25	0.19	0.33	0.33	0.22	0.36	0.36
Volume/Cap:	0.61	0.57	0.57	0.44	0.53	0.61	0.61	0.39	0.39	0.39	0.61	0.61
Delay/Veh:	58.6	40.5	40.5	52.3	39.1	40.6	47.5	31.0	31.0	40.6	32.2	32.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.6	40.5	40.5	52.3	39.1	40.6	47.5	31.0	31.0	40.6	32.2	32.2
LOS by Move:	E+	D	D	D-	D	D	D	C	C	D	C-	C-
HCM2kAvgQ:	4	8	8	3	8	9	8	7	7	5	12	12

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1027: Moffett Boulevard and Middlefield Road

Signal=Protect/Rights=Include
Final Vol: 179 682*** 117
Lanes: 0 1 1 0 1

Signal=Protect
Rights=Include
Final Vol: 161, 868***, 137
Lanes: 1, 0, 1, 1, 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 120
Loss Time (sec): 12
Critical V/C: 0.741
Avg Crit Del (sec/veh): 40.8
Avg Delay (sec/veh): 39.7
LOS: D

Signal=Protect
Rights=Include
Lanes: 0, 1, 1, 0, 1
Final Vol: 43, 552, 198***

Lanes: 1 0 1 1 0
Final Vol: 87*** 217 139
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	87	217	139	117	682	179	161	868	137	198	552	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	217	139	117	682	179	161	868	137	198	552	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	217	139	117	682	179	161	868	137	198	552	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	217	139	117	682	179	161	868	137	198	552	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	217	139	117	682	179	161	868	137	198	552	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	217	139	117	682	179	161	868	137	198	552	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.20	0.80	1.00	1.57	0.43	1.00	1.72	0.28	1.00	1.85	0.15
Final Sat.:	1750	2254	1444	1750	2930	769	1750	3195	504	1750	3432	267
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.07	0.23	0.23	0.09	0.27	0.27	0.11	0.16	0.16
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.22	0.22	0.16	0.31	0.31	0.19	0.37	0.37	0.15	0.33	0.33
Volume/Cap:	0.74	0.43	0.43	0.43	0.74	0.74	0.49	0.74	0.74	0.74	0.49	0.49
Delay/Veh:	77.1	40.2	40.2	46.9	39.4	39.4	44.6	35.3	35.3	59.2	32.4	32.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.1	40.2	40.2	46.9	39.4	39.4	44.6	35.3	35.3	59.2	32.4	32.4
LOS by Move:	E-	D	D	D	D	D	D	D+	D+	E+	C-	C-
HCM2kAvgQ:	4	6	6	4	15	15	6	18	18	8	9	9

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #1027: Moffett Boulevard and Middlefield Road

Signal=Protect/Rights=Include
Final Vol: 270*** 258 79
Lanes: 0 1 1 0 1

Signal=Protect Rights=Include (Eastbound)
Final Vol: 203*** Lanes: 1
Lanes: 0
Final Vol: 436 Lanes: 1
Lanes: 1
Final Vol: 78 Lanes: 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 120
Loss Time (sec): 12
Critical V/C: 0.613
Avg Crit Del (sec/veh): 38.3
Avg Delay (sec/veh): 38.1
LOS: D+

Signal=Protect Rights=Include (Westbound)
Lanes: 0 Final Vol: 81
Lanes: 1
Lanes: 1 Final Vol: 767***
Lanes: 0
Lanes: 1 Final Vol: 174

Lanes: 1 0 1 1 0
Final Vol: 99*** 408 127
Signal=Protect/Rights=Include

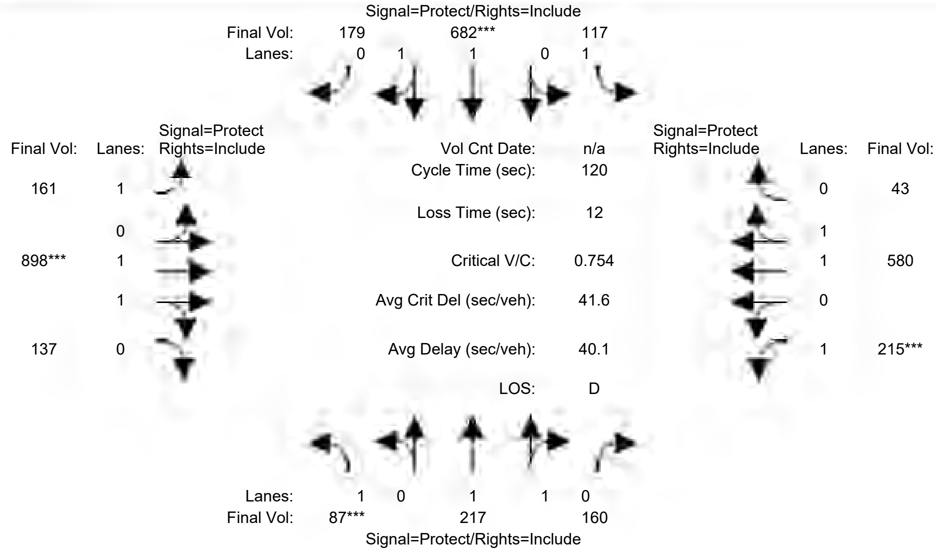
Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	99	408	113	79	258	270	203	413	78	152	741	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	408	113	79	258	270	203	413	78	152	741	81
Added Vol:	0	0	14	0	0	0	0	23	0	22	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	408	127	79	258	270	203	436	78	174	767	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	408	127	79	258	270	203	436	78	174	767	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	408	127	79	258	270	203	436	78	174	767	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	408	127	79	258	270	203	436	78	174	767	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.49	0.51	1.00	1.00	1.00	1.00	1.67	0.33	1.00	1.79	0.21
Final Sat.:	1750	2840	884	1750	1900	1750	1750	3182	569	1750	3409	360
Capacity Analysis Module:												
Vol/Sat:	0.06	0.14	0.14	0.05	0.14	0.15	0.12	0.14	0.14	0.10	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.09	0.24	0.24	0.10	0.25	0.25	0.19	0.32	0.32	0.23	0.37	0.37
Volume/Cap:	0.61	0.59	0.59	0.45	0.54	0.61	0.61	0.43	0.43	0.43	0.61	0.61
Delay/Veh:	59.2	41.0	41.0	52.9	39.5	41.1	48.0	32.2	32.2	39.8	31.9	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.2	41.0	41.0	52.9	39.5	41.1	48.0	32.2	32.2	39.8	31.9	31.9
LOS by Move:	E+	D	D	D-	D	D	D	C-	C-	D	C	C
HCM2kAvgQ:	4	9	9	3	8	9	8	8	8	6	12	12

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #1027: Moffett Boulevard and Middlefield Road



Street Name:	Moffett Boulevard						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	87	217	139	117	682	179	161	868	137	198	552	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	217	139	117	682	179	161	868	137	198	552	43
Added Vol:	0	0	21	0	0	0	0	30	0	17	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	217	160	117	682	179	161	898	137	215	580	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	217	160	117	682	179	161	898	137	215	580	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	217	160	117	682	179	161	898	137	215	580	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	217	160	117	682	179	161	898	137	215	580	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.11	0.89	1.00	1.56	0.44	1.00	1.72	0.28	1.00	1.85	0.15
Final Sat.:	1750	2110	1556	1750	2957	776	1750	3260	497	1750	3517	261
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.07	0.23	0.23	0.09	0.28	0.28	0.12	0.16	0.16
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.23	0.23	0.15	0.31	0.31	0.19	0.37	0.37	0.16	0.34	0.34
Volume/Cap:	0.75	0.46	0.46	0.46	0.75	0.75	0.49	0.75	0.75	0.75	0.49	0.49
Delay/Veh:	79.3	40.5	40.5	48.1	40.5	40.5	44.6	35.8	35.8	58.8	31.7	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.3	40.5	40.5	48.1	40.5	40.5	44.6	35.8	35.8	58.8	31.7	31.7
LOS by Move:	E-	D	D	D	D	D	D	D+	D+	E+	C	C
HCM2kAvgQ:	4	6	6	4	15	15	6	18	18	8	9	9

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Ignore
Final Vol: 0 154 50***
Lanes: 1 0 2 0 1

Signal=Protect Rights=Overlap (East Bound)
Final Vol: 97*** / 1012 / 101
Lanes: 1 / 0 / 2 / 0 / 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 138
Loss Time (sec): 12
Critical V/C: 0.503
Avg Crit Del (sec/veh): 43.7
Avg Delay (sec/veh): 42.4
LOS: D

Signal=Protect Rights=Overlap (West Bound)
Lanes: 1 / 0 / 2 / 0 / 1
Final Vol: 113 / 1176*** / 142

Lanes: 2 0 1 1 0
Final Vol: 160 196*** 75
Signal=Protect/Rights=Include

Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	41	41	41	19	19	19	21	69	69	21	74	74
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	160	196	75	50	154	243	97	1012	101	142	1176	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	196	75	50	154	243	97	1012	101	142	1176	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	196	75	50	154	243	97	1012	101	142	1176	113
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	196	75	50	154	0	97	1012	101	142	1176	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	196	75	50	154	0	97	1012	101	142	1176	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	196	75	50	154	0	97	1012	101	142	1176	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.41	0.59	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2685	1027	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.03	0.04	0.00	0.06	0.27	0.06	0.08	0.31	0.06
Crit Moves:		****		****			****				****	
Green/Cycle:	0.25	0.25	0.25	0.11	0.11	0.00	0.13	0.44	0.68	0.13	0.44	0.56
Volume/Cap:	0.21	0.30	0.30	0.25	0.36	0.00	0.44	0.61	0.08	0.61	0.70	0.12
Delay/Veh:	50.2	51.5	51.5	68.2	68.9	0.0	69.0	36.9	9.0	73.1	38.8	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	51.5	51.5	68.2	68.9	0.0	69.0	36.9	9.0	73.1	38.8	17.6
LOS by Move:	D	D-	D-	E	E	A	E	D+	A	E	D+	B
HCM2kAvgQ:	4	6	6	2	4	0	5	20	2	7	23	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Overlap
Final Vol: 352 348*** 67
Lanes: 1 0 2 0 1

Westbound approach (left side): Signal=Protect, Rights=Include
Final Vol: 157 / 1200*** / 228
Lanes: 1 / 0 / 2 / 0 / 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 132
Loss Time (sec): 21
Critical V/C: 0.752
Avg Crit Del (sec/veh): 69.5
Avg Delay (sec/veh): 63.4
LOS: E

Signal=Protect
Rights=Overlap
Lanes: 1 / 0 / 2 / 0 / 1
Final Vol: 69 / 1150 / 169***

Lanes: 2 0 1 1 0
Final Vol: 150*** 191 75
Signal=Protect/Rights=Include

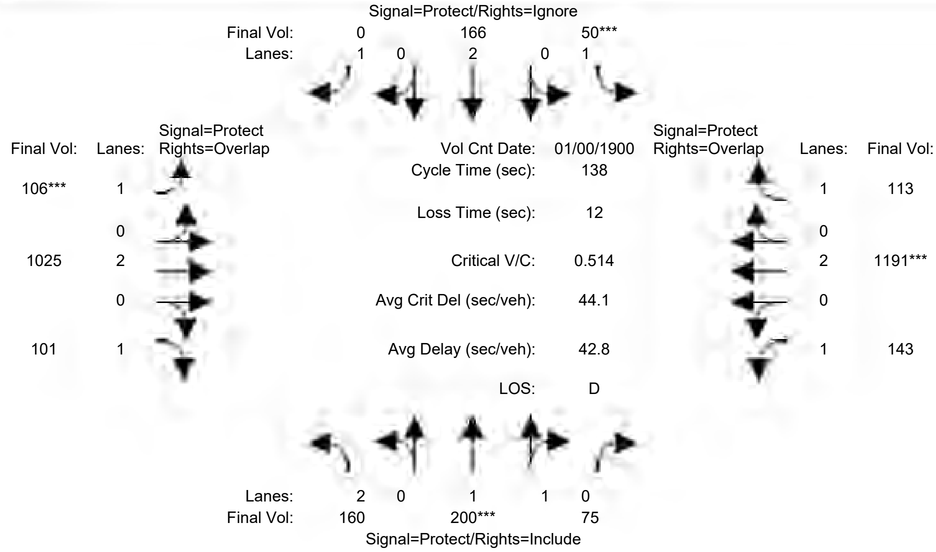
Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	46	46	10	26	26	18	59	59	17	58	58
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	150	191	75	67	348	352	157	1200	228	169	1150	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	191	75	67	348	352	157	1200	228	169	1150	69
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	191	75	67	348	352	157	1200	228	169	1150	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	191	75	67	348	352	157	1200	228	169	1150	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	191	75	67	348	352	157	1200	228	169	1150	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	191	75	67	348	352	157	1200	228	169	1150	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.84	0.81	0.78	0.85	0.78	0.78	0.85	0.78	0.78	0.85	0.78
Lanes:	2.00	1.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2677	2258	886	1488	3230	1488	1488	3230	1488	1488	3230	1488
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.08	0.05	0.11	0.24	0.11	0.37	0.15	0.11	0.36	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.20	0.30	0.30	0.07	0.17	0.29	0.12	0.39	0.39	0.11	0.38	0.44
Volume/Cap:	0.29	0.28	0.28	0.69	0.63	0.82	0.90	0.96	0.40	1.02	0.94	0.10
Delay/Veh:	52.7	41.0	41.0	88.9	61.5	63.0	106.7	63.4	34.6	144.0	59.5	24.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.7	41.0	41.0	88.9	61.5	63.0	106.7	63.4	34.6	144.0	59.5	24.8
LOS by Move:	D-	D	D	F	E	E	F	E	C-	F	E+	C
HCM2kAvgQ:	4	6	6	4	8	18	11	33	10	11	29	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #1029: Moffett Boulevard and Central Expressway



Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	41	41	41	19	19	19	21	69	69	21	74	74
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	160	196	75	50	154	243	97	1012	101	142	1176	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	196	75	50	154	243	97	1012	101	142	1176	113
Added Vol:	0	4	0	0	12	10	9	13	0	1	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	200	75	50	166	253	106	1025	101	143	1191	113
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	200	75	50	166	0	106	1025	101	143	1191	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	200	75	50	166	0	106	1025	101	143	1191	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	200	75	50	166	0	106	1025	101	143	1191	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	1.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3150	2701	1013	1750	3800	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.03	0.04	0.00	0.06	0.27	0.06	0.08	0.31	0.06
Crit Moves:		****		****			****				****	
Green/Cycle:	0.25	0.25	0.25	0.11	0.11	0.00	0.13	0.44	0.68	0.13	0.44	0.56
Volume/Cap:	0.21	0.30	0.30	0.25	0.38	0.00	0.48	0.62	0.08	0.62	0.71	0.12
Delay/Veh:	50.2	51.5	51.5	68.2	69.1	0.0	69.6	37.1	9.0	73.3	39.1	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	51.5	51.5	68.2	69.1	0.0	69.6	37.1	9.0	73.3	39.1	17.6
LOS by Move:	D	D-	D-	E	E	A	E	D+	A	E	D	B
HCM2kAvgQ:	4	6	6	2	4	0	6	20	2	7	23	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #1029: Moffett Boulevard and Central Expressway

Signal=Protect/Rights=Overlap
Final Vol: 361 356*** 67
Lanes: 1 0 2 0 1

Final Vol:	Lanes:	Signal=Protect Rights=Include			Signal=Protect Rights=Overlap	Lanes:	Final Vol:
			Vol Cnt Date:	n/a			
166	1		Cycle Time (sec):	132		1	69
	0		Loss Time (sec):	21		0	
1215***	2		Critical V/C:	0.761		2	1163
	0		Avg Crit Del (sec/veh):	71.4		0	
228	1		Avg Delay (sec/veh):	65.6		1	170***
			LOS:	E			

Lanes: 2 0 1 1 0
Final Vol: 150*** 203 76
Signal=Protect/Rights=Include

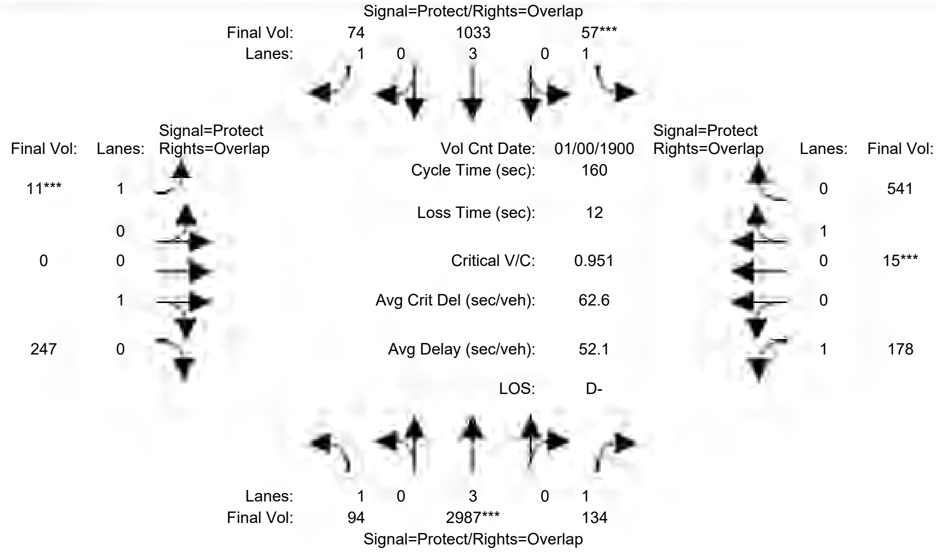
Street Name:	Moffett Boulevard						Central Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	46	46	10	26	26	18	59	59	17	58	58
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	150	191	75	67	348	352	157	1200	228	169	1150	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	191	75	67	348	352	157	1200	228	169	1150	69
Added Vol:	0	12	1	0	8	9	9	15	0	1	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	203	76	67	356	361	166	1215	228	170	1163	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	203	76	67	356	361	166	1215	228	170	1163	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	203	76	67	356	361	166	1215	228	170	1163	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	203	76	67	356	361	166	1215	228	170	1163	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.85	0.78	0.78	0.85	0.78	0.78	0.85	0.78	0.78	0.85	0.78
Lanes:	2.00	1.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2677	2297	860	1488	3230	1488	1488	3230	1488	1488	3230	1488
Capacity Analysis Module:												
Vol/Sat:	0.06	0.09	0.09	0.05	0.11	0.24	0.11	0.38	0.15	0.11	0.36	0.05
Crit Moves:	****				****			****		****		
Green/Cycle:	0.20	0.30	0.30	0.07	0.17	0.29	0.12	0.39	0.39	0.11	0.38	0.44
Volume/Cap:	0.29	0.29	0.29	0.69	0.65	0.84	0.95	0.98	0.40	1.03	0.95	0.10
Delay/Veh:	52.7	41.2	41.2	88.9	62.0	65.5	120.0	66.1	34.6	145.7	61.4	24.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.7	41.2	41.2	88.9	62.0	65.5	120.0	66.1	34.6	145.7	61.4	24.8
LOS by Move:	D-	D	D	F	E	E	F	E	C-	F	E	C
HCM2kAvgQ:	4	6	6	4	8	19	12	34	10	11	29	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1036: Mathilda Avenue and Indio Aveue



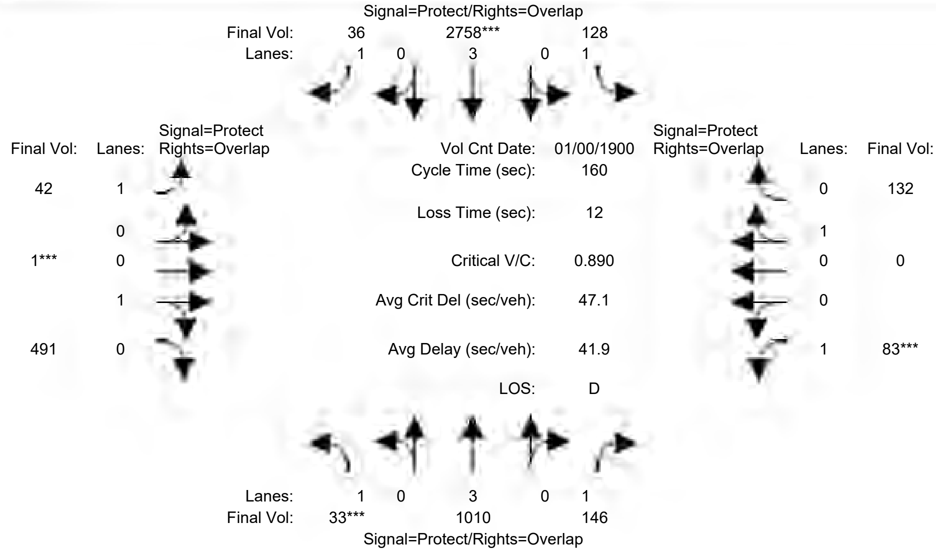
Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	94	2987	134	57	1033	74	11	0	247	178	15	541
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	2987	134	57	1033	74	11	0	247	178	15	541
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	2987	134	57	1033	74	11	0	247	178	15	541
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	2987	134	57	1033	74	11	0	247	178	15	541
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	2987	134	57	1033	74	11	0	247	178	15	541
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	2987	134	57	1033	74	11	0	247	178	15	541
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.00	1.00	1.00	0.02	0.98
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	0	1750	1750	47	1706
Capacity Analysis Module:												
Vol/Sat:	0.05	0.52	0.08	0.03	0.18	0.04	0.01	0.00	0.14	0.10	0.32	0.32
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.52	0.72	0.04	0.44	0.48	0.04	0.00	0.17	0.19	0.32	0.36
Volume/Cap:	0.42	1.00	0.11	0.74	0.42	0.09	0.14	0.00	0.82	0.53	1.00	0.88
Delay/Veh:	65.3	55.8	7.1	107.8	31.2	22.6	74.5	0.0	79.3	59.5	94.0	61.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	55.8	7.1	107.8	31.2	22.6	74.5	0.0	79.3	59.5	94.0	61.8
LOS by Move:	E	E+	A	F	C	C+	E	A	E-	E+	F	E
HCM2kAvgQ:	5	56	2	3	11	2	1	0	15	9	36	30

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1036: Mathilda Avenue and Indio Aveue



Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	33	1010	146	128	2758	36	42	1	491	83	0	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	1010	146	128	2758	36	42	1	491	83	0	132
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	1010	146	128	2758	36	42	1	491	83	0	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	1010	146	128	2758	36	42	1	491	83	0	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	1010	146	128	2758	36	42	1	491	83	0	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	1010	146	128	2758	36	42	1	491	83	0	132
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.95	0.95	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.01	0.99	1.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	4	1796	1750	0	1800
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.08	0.07	0.48	0.02	0.02	0.27	0.27	0.05	0.00	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.04	0.41	0.46	0.17	0.53	0.88	0.35	0.30	0.34	0.05	0.00	0.22
Volume/Cap:	0.43	0.44	0.18	0.44	0.91	0.02	0.07	0.91	0.80	0.91	0.00	0.33
Delay/Veh:	78.4	34.4	25.7	60.8	39.0	1.2	34.7	74.0	54.7	141.9	0.0	53.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.4	34.4	25.7	60.8	39.0	1.2	34.7	74.0	54.7	141.9	0.0	53.1
LOS by Move:	E-	C-	C	E	D	A	C-	E	D-	F	A	D-
HCM2kAvgQ:	2	12	4	6	42	0	1	28	24	7	0	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #1036: Mathilda Avenue and Indio Aveue

Signal=Protect/Rights=Overlap
Final Vol: 74 1035 86***
Lanes: 1 0 3 0 1

Signal=Protect Rights=Overlap (West approach)
Final Vol: / Lanes:
11*** 1
0
0 0
1
247 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 160
Loss Time (sec): 12
Critical V/C: 0.989
Avg Crit Del (sec/veh): 72.8
Avg Delay (sec/veh): 58.6
LOS: E+

Signal=Protect Rights=Overlap (East approach)
Lanes: / Final Vol:
0 569
1
0 15***
0
1 178

Lanes: 1 0 3 0 1
Final Vol: 94 2999*** 134
Signal=Protect/Rights=Overlap

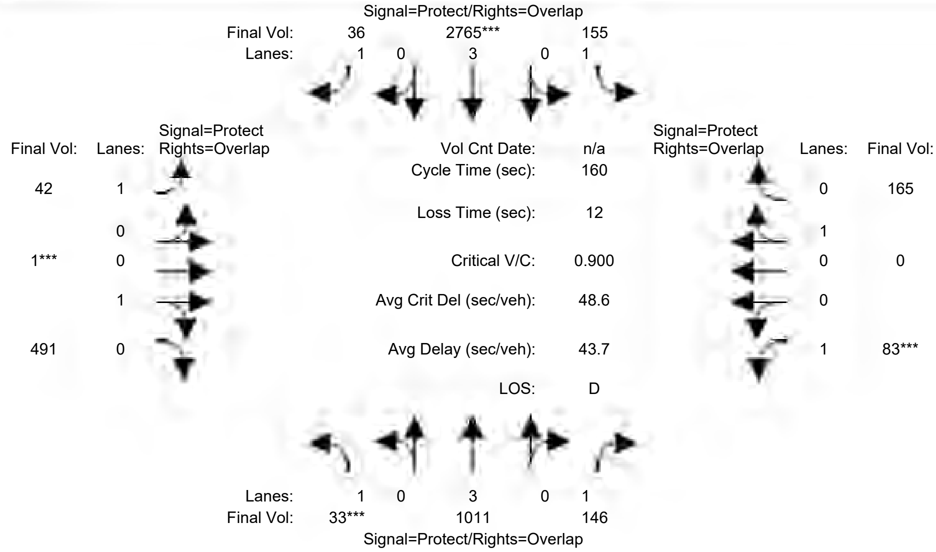
Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	94	2987	134	57	1033	74	11	0	247	178	15	541
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	2987	134	57	1033	74	11	0	247	178	15	541
Added Vol:	0	12	0	29	2	0	0	0	0	0	0	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	2999	134	86	1035	74	11	0	247	178	15	569
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	2999	134	86	1035	74	11	0	247	178	15	569
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	2999	134	86	1035	74	11	0	247	178	15	569
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	2999	134	86	1035	74	11	0	247	178	15	569
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.00	1.00	1.00	0.02	0.98
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	0	1750	1750	45	1709
Capacity Analysis Module:												
Vol/Sat:	0.05	0.53	0.08	0.05	0.18	0.04	0.01	0.00	0.14	0.10	0.33	0.33
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.51	0.71	0.05	0.43	0.47	0.04	0.00	0.17	0.20	0.32	0.37
Volume/Cap:	0.42	1.03	0.11	1.03	0.42	0.09	0.14	0.00	0.82	0.52	1.03	0.90
Delay/Veh:	65.7	64.4	7.4	183.4	31.8	23.1	74.5	0.0	80.8	58.7	100	62.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.7	64.4	7.4	183.4	31.8	23.1	74.5	0.0	80.8	58.7	100	62.8
LOS by Move:	E	E	A	F	C	C	E	A	F	E+	F	E
HCM2kAvgQ:	5	58	2	6	11	2	1	0	15	9	38	32

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #1036: Mathilda Avenue and Indio Aveue



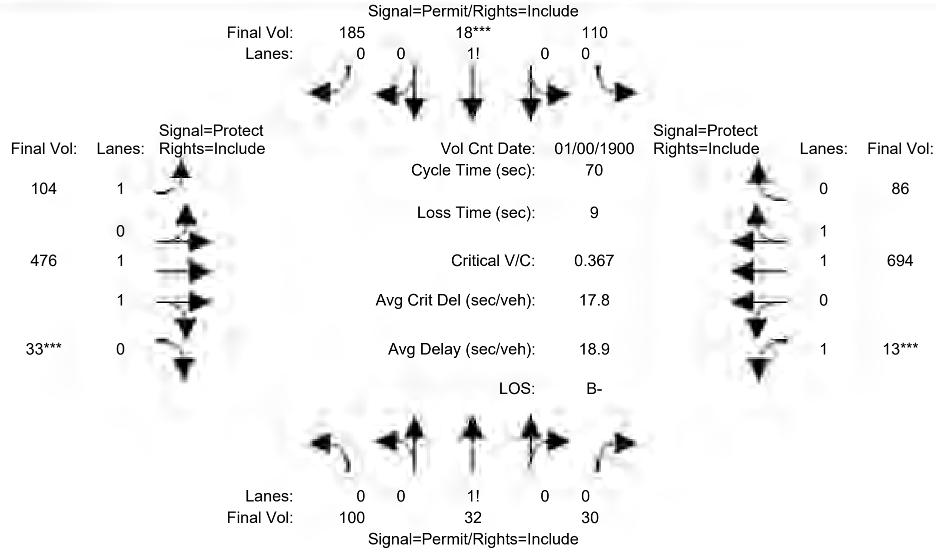
Street Name:	Mathilda Avenue						Indio Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	33	1010	146	128	2758	36	42	1	491	83	0	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	1010	146	128	2758	36	42	1	491	83	0	132
Added Vol:	0	1	0	27	7	0	0	0	0	0	0	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	1011	146	155	2765	36	42	1	491	83	0	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	1011	146	155	2765	36	42	1	491	83	0	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	1011	146	155	2765	36	42	1	491	83	0	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	1011	146	155	2765	36	42	1	491	83	0	165
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.01	0.99	1.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	4	1747	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.08	0.09	0.49	0.02	0.02	0.28	0.28	0.05	0.00	0.09
Crit Moves:	****				****			****		****		
Green/Cycle:	0.04	0.38	0.43	0.19	0.53	0.84	0.31	0.30	0.35	0.05	0.00	0.24
Volume/Cap:	0.43	0.47	0.19	0.47	0.92	0.02	0.08	0.92	0.81	0.92	0.00	0.39
Delay/Veh:	78.4	37.6	28.4	58.7	40.5	2.1	38.6	75.7	55.1	145.5	0.0	51.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.4	37.6	28.4	58.7	40.5	2.1	38.6	75.7	55.1	145.5	0.0	51.5
LOS by Move:	E-	D+	C	E+	D	A	D+	E-	E+	F	A	D-
HCM2kAvgQ:	2	12	5	7	42	0	2	29	25	7	0	7

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1038: Middlefield Road and Easy Street



Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM

	L	T	R	L	T	R	L	T	R	L	T	R
Base Vol:	100	32	30	110	18	185	104	476	33	13	694	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	32	30	110	18	185	104	476	33	13	694	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	32	30	110	18	185	104	476	33	13	694	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	32	30	110	18	185	104	476	33	13	694	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	32	30	110	18	185	104	476	33	13	694	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	32	30	110	18	185	104	476	33	13	694	86

Saturation Flow Module:

	L	T	R	L	T	R	L	T	R	L	T	R
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.63	0.18	0.19	0.35	0.05	0.60	1.00	1.86	0.14	1.00	1.76	0.24
Final Sat.:	1097	351	329	618	101	1039	1750	3534	245	1750	3349	415

Capacity Analysis Module:

	L	T	R	L	T	R	L	T	R	L	T	R
Vol/Sat:	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.13	0.13	0.01	0.21	0.21
Crit Moves:					****				****	****		
Green/Cycle:	0.41	0.41	0.41	0.41	0.41	0.41	0.10	0.31	0.31	0.14	0.35	0.35
Volume/Cap:	0.22	0.22	0.22	0.43	0.43	0.43	0.58	0.43	0.43	0.05	0.58	0.58
Delay/Veh:	13.3	13.3	13.3	15.0	15.0	15.0	34.9	19.3	19.3	26.0	19.0	19.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.3	13.3	13.3	15.0	15.0	15.0	34.9	19.3	19.3	26.0	19.0	19.0
LOS by Move:	B	B	B	B	B	B	C-	B-	B-	C	B-	B-
HCM2kAvgQ:	2	2	2	5	5	5	2	4	4	0	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include
Final Vol: 68 12*** 58
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (westbound side, left of diagram)
Final Vol: 90 — Lanes: 1
Lanes: 0
Final Vol: 1041*** — Lanes: 1
Lanes: 1
Final Vol: 98 — Lanes: 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.466
Avg Crit Del (sec/veh): 11.8
Avg Delay (sec/veh): 11.7
LOS: B+

Signal=Protect Rights=Include
Lanes: 0 — Final Vol: 49
Lanes: 1
Lanes: 1 — Final Vol: 660
Lanes: 0
Lanes: 1 — Final Vol: 34***

Lanes: 0 0 1! 0 0
Final Vol: 46 16 8
Signal=Permit/Rights=Include

Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	46	16	8	58	12	68	90	1041	98	34	660	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	16	8	58	12	68	90	1041	98	34	660	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	16	8	58	12	68	90	1041	98	34	660	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	16	8	58	12	68	90	1041	98	34	660	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	16	8	58	12	68	90	1041	98	34	660	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	16	8	58	12	68	90	1041	98	34	660	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.66	0.23	0.11	0.42	0.09	0.49	1.00	1.82	0.18	1.00	1.86	0.14
Final Sat.:	1150	400	200	736	152	862	1750	3381	318	1750	3444	256
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.08	0.08	0.08	0.05	0.31	0.31	0.02	0.19	0.19
Crit Moves:					****			****		****		
Green/Cycle:	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.58	0.58	0.14	0.57	0.57
Volume/Cap:	0.27	0.27	0.27	0.53	0.53	0.53	0.34	0.53	0.53	0.14	0.34	0.34
Delay/Veh:	27.0	27.0	27.0	29.6	29.6	29.6	27.2	9.2	9.2	26.5	8.1	8.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.0	27.0	27.0	29.6	29.6	29.6	27.2	9.2	9.2	26.5	8.1	8.1
LOS by Move:	C	C	C	C	C	C	C	A	A	C	A	A
HCM2kAvgQ:	2	2	2	4	4	4	2	7	7	1	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include
Final Vol: 185 18*** 110
Lanes: 0 0 1! 0 0

Final Vol: / Lanes: / Signal=Protect Rights=Include (West approach)
104 1
0
513 1
1
33*** 0

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.379
Avg Crit Del (sec/veh): 17.8
Avg Delay (sec/veh): 18.7
LOS: B-

Signal=Protect Rights=Include / Lanes: / Final Vol: (East approach)
0 86
1
1 742
0
1 13***

Lanes: 0 0 1! 0 0
Final Vol: 100 32 30
Signal=Permit/Rights=Include

Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	100	32	30	110	18	185	104	476	33	13	694	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	32	30	110	18	185	104	476	33	13	694	86
Added Vol:	0	0	0	0	0	0	0	37	0	0	48	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	32	30	110	18	185	104	513	33	13	742	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	32	30	110	18	185	104	513	33	13	742	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	32	30	110	18	185	104	513	33	13	742	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	32	30	110	18	185	104	513	33	13	742	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.63	0.18	0.19	0.35	0.05	0.60	1.00	1.87	0.13	1.00	1.78	0.22
Final Sat.:	1097	351	329	618	101	1039	1750	3552	228	1750	3375	391
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.14	0.14	0.01	0.22	0.22
Crit Moves:					****				****	****		
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.10	0.33	0.33	0.14	0.37	0.37
Volume/Cap:	0.23	0.23	0.23	0.44	0.44	0.44	0.60	0.44	0.44	0.05	0.60	0.60
Delay/Veh:	13.9	13.9	13.9	15.7	15.7	15.7	35.6	18.8	18.8	26.0	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.9	13.9	13.9	15.7	15.7	15.7	35.6	18.8	18.8	26.0	18.5	18.5
LOS by Move:	B	B	B	B	B	B	D+	B-	B-	C	B-	B-
HCM2kAvgQ:	3	3	3	6	6	6	2	5	5	0	8	8

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #1038: Middlefield Road and Easy Street

Signal=Permit/Rights=Include
Final Vol: 68 12*** 58
Lanes: 0 0 1! 0 0

Signal=Protect Rights=Include (West)
Final Vol: / Lanes:
90 / 1
0
1092*** / 1
1
98 / 0

Vol Cnt Date: n/a
Cycle Time (sec): 70
Loss Time (sec): 9
Critical V/C: 0.474
Avg Crit Del (sec/veh): 11.7
Avg Delay (sec/veh): 11.5
LOS: B+

Signal=Protect Rights=Include (East)
Lanes: / Final Vol:
0 / 49
1
1 / 705
0
1 / 34***

Lanes: 0 0 1! 0 0
Final Vol: 46 16 8
Signal=Permit/Rights=Include

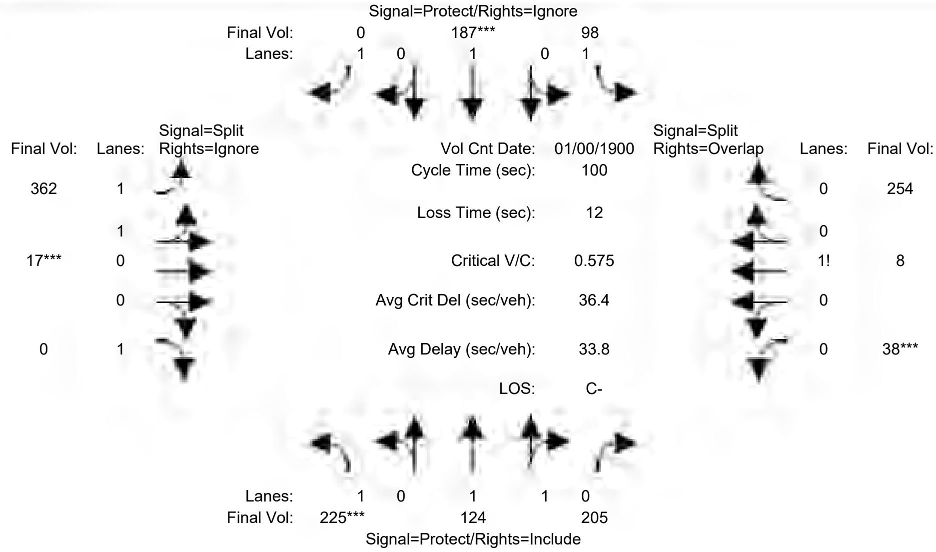
Street Name:	Easy Street						Middlefield Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	0	0	10	10	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	46	16	8	58	12	68	90	1041	98	34	660	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	16	8	58	12	68	90	1041	98	34	660	49
Added Vol:	0	0	0	0	0	0	0	51	0	0	45	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	16	8	58	12	68	90	1092	98	34	705	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	16	8	58	12	68	90	1092	98	34	705	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	16	8	58	12	68	90	1092	98	34	705	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	16	8	58	12	68	90	1092	98	34	705	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.67	0.21	0.12	0.42	0.08	0.50	1.00	1.82	0.18	1.00	1.86	0.14
Final Sat.:	1171	407	204	741	153	868	1750	3463	311	1750	3533	246
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.08	0.08	0.08	0.05	0.32	0.32	0.02	0.20	0.20
Crit Moves:					****			****		****		
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.58	0.58	0.14	0.58	0.58
Volume/Cap:	0.27	0.27	0.27	0.54	0.54	0.54	0.35	0.54	0.54	0.14	0.35	0.35
Delay/Veh:	27.2	27.2	27.2	30.1	30.1	30.1	27.5	9.1	9.1	26.5	7.9	7.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.2	27.2	27.2	30.1	30.1	30.1	27.5	9.1	9.1	26.5	7.9	7.9
LOS by Move:	C	C	C	C	C	C	C	A	A	C	A	A
HCM2kAvgQ:	2	2	2	4	4	4	2	8	8	1	4	4

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1039: Whisman Road and SR 237 WB Ramps



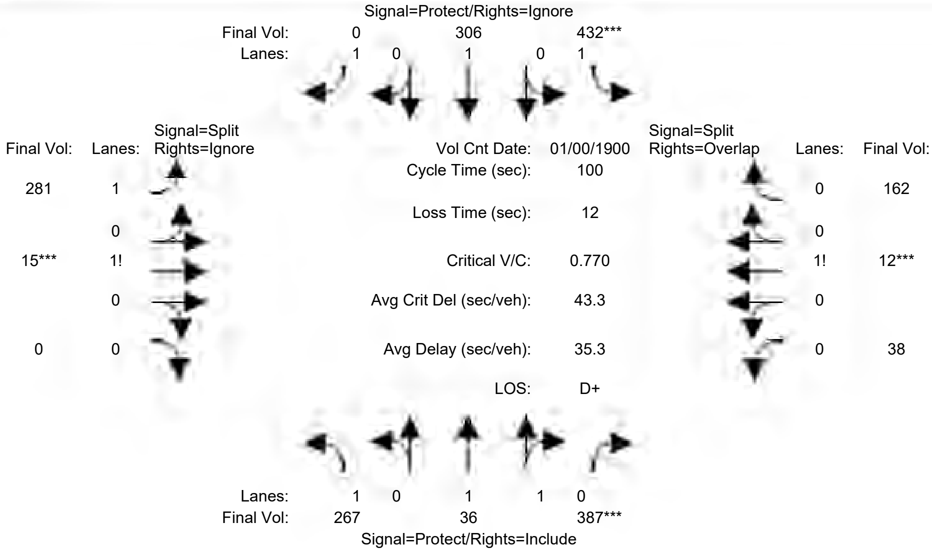
Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	225	124	205	98	187	330	362	17	58	38	8	254
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	124	205	98	187	330	362	17	58	38	8	254
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	124	205	98	187	330	362	17	58	38	8	254
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	225	124	205	98	187	0	362	17	0	38	8	254
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	124	205	98	187	0	362	17	0	38	8	254
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	225	124	205	98	187	0	362	17	0	38	8	254
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.92	0.08	1.00	0.13	0.02	0.85
Final Sat.:	1750	1900	1750	1750	1900	1750	3355	158	1750	222	47	1485
Capacity Analysis Module:												
Vol/Sat:	0.13	0.07	0.12	0.06	0.10	0.00	0.11	0.11	0.00	0.17	0.17	0.17
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.20	0.20	0.20	0.17	0.00	0.19	0.19	0.00	0.30	0.30	0.49
Volume/Cap:	0.57	0.33	0.59	0.28	0.57	0.00	0.57	0.57	0.00	0.57	0.57	0.35
Delay/Veh:	36.7	34.7	38.2	34.6	40.6	0.0	38.2	38.2	0.0	31.3	31.3	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	34.7	38.2	34.6	40.6	0.0	38.2	38.2	0.0	31.3	31.3	15.6
LOS by Move:	D+	C-	D+	C-	D	A	D+	D+	A	C	C	B
HCM2kAvgQ:	7	3	7	3	6	0	6	6	0	9	9	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1039: Whisman Road and SR 237 WB Ramps



Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	267	36	387	432	306	697	281	15	37	38	12	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	36	387	432	306	697	281	15	37	38	12	162
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	36	387	432	306	697	281	15	37	38	12	162
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	267	36	387	432	306	0	281	15	0	38	12	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	36	387	432	306	0	281	15	0	38	12	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	267	36	387	432	306	0	281	15	0	38	12	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.90	0.10	0.00	0.18	0.06	0.76
Final Sat.:	1750	1900	1750	1750	1900	1750	3331	169	0	314	99	1337
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.22	0.25	0.16	0.00	0.08	0.09	0.00	0.12	0.12	0.12
Crit Moves:			****	****				****			****	
Green/Cycle:	0.29	0.29	0.29	0.32	0.31	0.00	0.12	0.12	0.00	0.16	0.16	0.47
Volume/Cap:	0.52	0.07	0.78	0.78	0.52	0.00	0.70	0.74	0.00	0.78	0.78	0.26
Delay/Veh:	30.4	26.0	39.7	37.6	29.2	0.0	47.6	49.7	0.0	53.5	53.5	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	26.0	39.7	37.6	29.2	0.0	47.6	49.7	0.0	53.5	53.5	12.8
LOS by Move:	C	C	D	D+	C	A	D	D	A	D-	D-	B
HCM2kAvgQ:	8	1	14	15	8	0	6	7	0	9	9	3

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP AM

Intersection #1039: Whisman Road and SR 237 WB Ramps

Signal=Protect/Rights=Ignore
Final Vol: 0 210*** 98
Lanes: 1 0 1 0 1

Signal=Split
Rights=Ignore
Final Vol: Lanes:
362 1
1
17*** 0
0
0 1

Vol Cnt Date: 01/00/1900
Cycle Time (sec): 100
Loss Time (sec): 12
Critical V/C: 0.589
Avg Crit Del (sec/veh): 36.9
Avg Delay (sec/veh): 33.9
LOS: C-

Signal=Split
Rights=Overlap
Lanes: Final Vol:
0 254
0
1! 8
0
0 38***

Lanes: 1 0 1 1 0
Final Vol: 225*** 124 205
Signal=Protect/Rights=Include

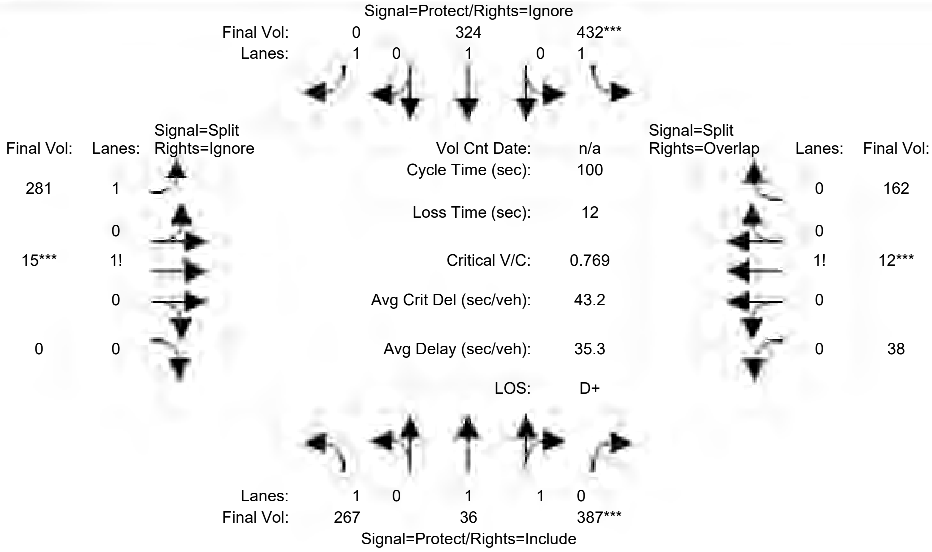
Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 0 Jan 1900 << 12:00:00 AM												
Base Vol:	225	124	205	98	187	330	362	17	58	38	8	254
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	124	205	98	187	330	362	17	58	38	8	254
Added Vol:	0	0	0	0	23	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	124	205	98	210	330	362	17	58	38	8	254
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	225	124	205	98	210	0	362	17	0	38	8	254
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	124	205	98	210	0	362	17	0	38	8	254
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	225	124	205	98	210	0	362	17	0	38	8	254
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.92	0.08	1.00	0.13	0.02	0.85
Final Sat.:	1750	1900	1750	1750	1900	1750	3355	158	1750	222	47	1485
Capacity Analysis Module:												
Vol/Sat:	0.13	0.07	0.12	0.06	0.11	0.00	0.11	0.11	0.00	0.17	0.17	0.17
Crit Moves:	****				****			****		****		
Green/Cycle:	0.22	0.20	0.20	0.20	0.19	0.00	0.18	0.18	0.00	0.29	0.29	0.49
Volume/Cap:	0.59	0.32	0.58	0.28	0.59	0.00	0.59	0.59	0.00	0.59	0.59	0.35
Delay/Veh:	37.5	34.2	37.4	34.1	39.7	0.0	38.8	38.8	0.0	32.2	32.2	15.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	34.2	37.4	34.1	39.7	0.0	38.8	38.8	0.0	32.2	32.2	15.7
LOS by Move:	D+	C-	D+	C-	D	A	D+	D+	A	C-	C-	B
HCM2kAvgQ:	7	3	7	3	7	0	7	7	0	9	9	6

Note: Queue reported is the number of cars per lane.

Middlefield Park Master Plan
Hexagon Transportation Consultants, Inc.
San Jose, CA

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PP PM

Intersection #1039: Whisman Road and SR 237 WB Ramps



Street Name:	SR 237 WB Ramps						Whishmand Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	12	12	12	12	12	12	8	12	12	8	12	12
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	267	36	387	432	306	697	281	15	37	38	12	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	36	387	432	306	697	281	15	37	38	12	162
Added Vol:	0	0	0	0	18	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	267	36	387	432	324	697	281	15	37	38	12	162
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	267	36	387	432	324	0	281	15	0	38	12	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	267	36	387	432	324	0	281	15	0	38	12	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	267	36	387	432	324	0	281	15	0	38	12	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.91	0.09	0.00	0.18	0.05	0.77
Final Sat.:	1750	1900	1750	1750	1900	1750	3343	170	0	315	100	1343
Capacity Analysis Module:												
Vol/Sat:	0.15	0.02	0.22	0.25	0.17	0.00	0.08	0.09	0.00	0.12	0.12	0.12
Crit Moves:			****	****				****			****	
Green/Cycle:	0.29	0.29	0.29	0.32	0.32	0.00	0.12	0.12	0.00	0.16	0.16	0.47
Volume/Cap:	0.53	0.07	0.77	0.77	0.53	0.00	0.70	0.73	0.00	0.77	0.77	0.25
Delay/Veh:	31.3	26.0	39.6	37.5	28.9	0.0	47.5	49.4	0.0	53.4	53.4	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.3	26.0	39.6	37.5	28.9	0.0	47.5	49.4	0.0	53.4	53.4	12.8
LOS by Move:	C	C	D	D+	C	A	D	D	A	D-	D-	B
HCM2kAvgQ:	8	1	14	15	9	0	6	7	0	9	9	3

Note: Queue reported is the number of cars per lane.

Appendix D

Background Developments

Mountain View Approved Project Trips for MPMP

Address/Location	Applicant/Owner/Project Name	Proposed Project Description
369 N Whisman Road	Whisman Associates LLC	180,773 Sq.ft. Office
840 East El Camino Real	IL EL Camino Hotel	38 new hotel rooms
231-235 Hope Street	Bill Maston Architect & Associates	9 Condominium units
777 W Middlefield Road	Fortbay	711 Apartments
759 W Middlefield Road	Prometheus	75 Apartments
582 Hope Street	The Sobrato Organization	96,500 sq.ft. mixed use with 8000 sq.ft retail and 88500 sq.ft office, 12 residential units, 3,400 sq.ft. church office.
1001 N Shoreline Boulevard	LinkedIn	203 Apartments and 100 Condo Units
1185 Terra Bella Avenue	Terra Bella, LLC	9700 Sq.ft. office
870 Leong Drive	Temple Hospitality	78-room hotel
Source: City of Mountain View, August 2021		

Sunnyvale Approved Project Trips for MPMP

Address/Location	Applicant/Owner/Project Name	Proposed Project Description
684 W Maude Avenue	SIMEON Commercial Properties Curt Setzer	620,000 s.f R&D office
610 N Mary Avenue	Irvine Company, Carlene Matchniff	1,471,400 sq. ft office with 40,000 sq. ft. amenity space
615 N Mathilda Avenue	JP DiNapoli Companies LLC	316,168 s.f. office with 13, 724 s.f. amenities building
623 Pastoria Avenue	Arc Tec, Inc.	56,817 s.f. office
445 N Mary Avenue	Jay Paul Janette D'Elia	171,734 s.f. office
1235 Bordeaux Drive	T2 Development, Rashik Patel	Two hotels with 164 and 184 rooms
1081 Innovation Way	Juniper Networks/RMW Architects	2,430,000 s.f. R&D office
1194 N Mathilda Avenue	FSP-Sunnyvale Office Park, LLC	248,259 s.f. R&D office
589 W Java	Yahoo!	339,000 s.f. office
1260 N Mathilda Avenue	JSR, Ray Hung	60,862 s.f office
915 De Guigne Drive	Watt Investments, Max Frank	450 townhouse units
728, 740, 750, 760, 814 San Aleso Avenue	Taylor Morrison	118 multi-family housing units
370 San Aleso Avenue	Toll Brothers Ben Helber	65 residential units - 18 duets and 47 townhomes
824 San Aleso Avenue	Artik Art & Architecture Gayatri Medury	Private high school with 400 students
210 W Ahwanee Avenue	Tapiti Inc. Kishore Polakala	14 multi-family housing units
810 W Maude Avenue	SIMEON Commercial Properties, Curt Setzer	2 R&D office buildings of approximately 162,000 s.f. each
Source: City of Sunnyvale, June 2021		

Appendix E

Signal and Stop Warrant Analysis

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25

Minor Street: Clyde Ave — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐ or
In built up area of isolated community of < 10,000 population……………………… ☐ } Rural (R)

☑ Urban (U)

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Prj	Background + Prj				
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB				
Highest Minor Street Average Delay (sec/veh)	8.6	9.8	10.2	12.3				
Corresponding Minor Street Approach Volume (veh/hr)	68	154	119	205				
Minor Street Total Delay (veh-hrs)	0.2	0.4	0.3	0.7				
Total Entering Volume (veh/hr)	640	755	1087	1202				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

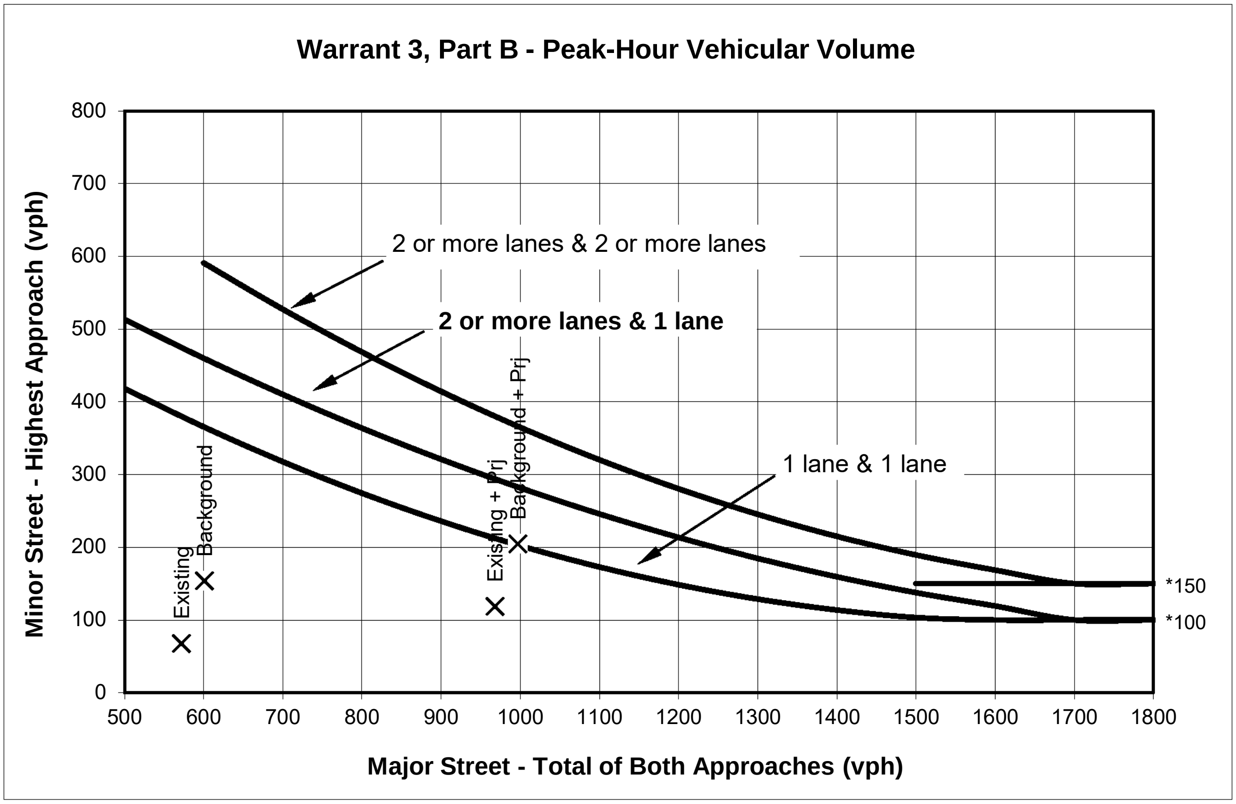
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		572	601	968	997				
Minor Street - Highest Approach	Clyde Ave	X		68	154	119	205				
Signal Warranted based on Part B?				**No**	**No**	**No**	**Yes**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & Clyde Ave **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		572	601	968	997				
Minor Street - Highest Approach	Clyde Ave	X		68	154	119	205				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25
Minor Street: Clyde Ave — Critical Approach Speed* (mph) 25

Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)………………………… ☐ or
In built up area of isolated community of < 10,000 population……………………… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour
The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A
(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR

	Existing	Background	Existing + Prj	Background + Prj				
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB				
Highest Minor Street Average Delay (sec/veh)	8.7	9.1	14.7	16.7				
Corresponding Minor Street Approach Volume (veh/hr)	146	161	418	433				
Minor Street Total Delay (veh-hrs)	0.4	0.4	1.7	2.0				
Total Entering Volume (veh/hr)	420	524	863	967				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	No	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

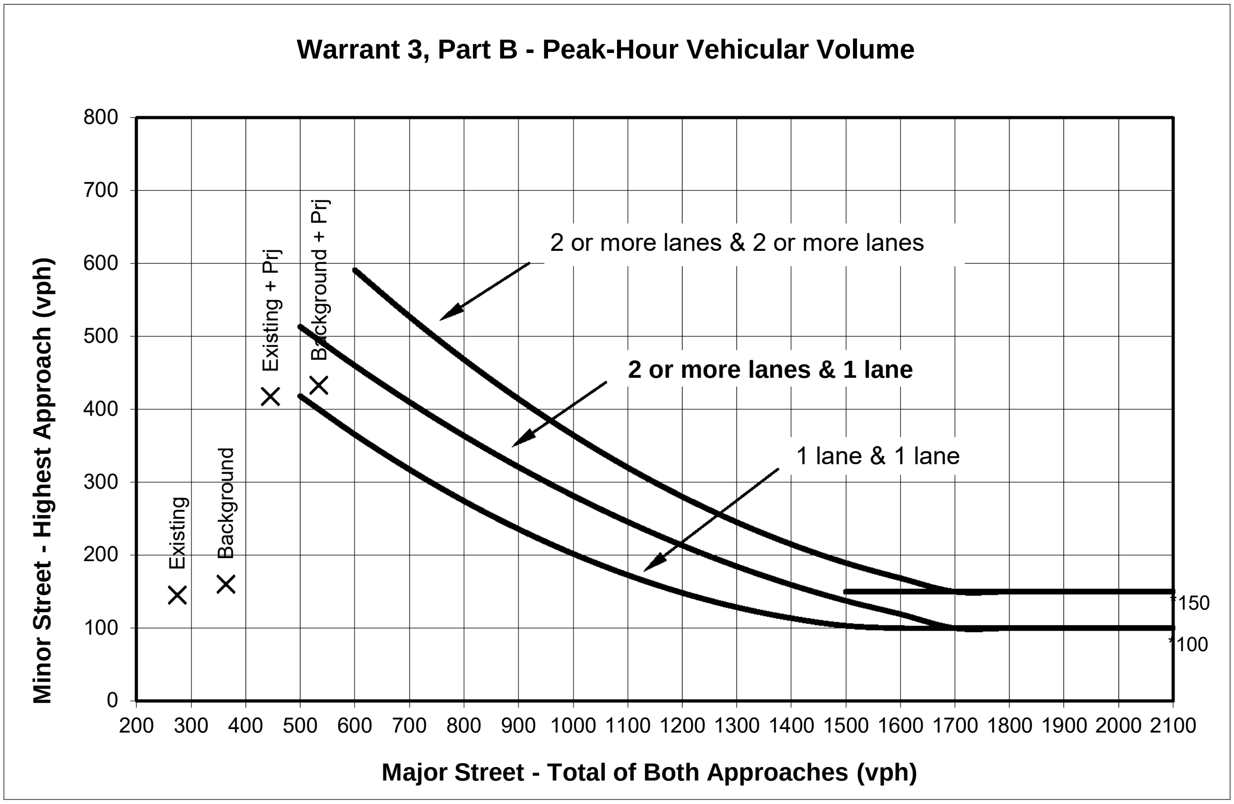
		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		274	363	445	534				
Minor Street - Highest Approach	Clyde Ave	X		146	161	418	433				
Signal Warranted based on Part B?				**No**	**No**	**No**	**Yes**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & Clyde Ave **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		274	363	445	534				
Minor Street - Highest Approach	Clyde Ave	X		146	161	418	433				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

8-Hour Vehicular Volume Warrant and Pedestrian Volume Warrant - Clyde Avenue and Maude Avenue

8-Hour Vehicular Volume Warrant:

Condition A: Min 500 vph TOTAL on MAJOR STREET for highest 8 hours and min 150 vph in the HIGHEST DIRECTION on MINOR STREET for the same 8 hours, or

Condition B: Min 750 vph TOTAL on MAJOR STREET for highest 8 hours and min 75 vph in the HIGHEST DIRECTION on MINOR STREET for the same 8 hours.

Pedestian Volume Warrant: Minimum threshold of 107 pedestrians per hour crossing major street

Existing+Project

Clyde Avenue & Maude Avenue						
Time [hr]	**7:00 AM**	**8:00 AM**	**9:00 AM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major Street (Total)	544	913	754	260	445	333
Minor Street (One Direction)	85	139	103	405	416	382
Meet 8hr Veh Warrant?	No	Yes	Yes	No	No	No
Pedestrian Counts[1]	<100	<100	<100	<100	<100	<100
Meet Ped. Warrant?	No	No	No	No	No	No

Notes:
1. Pedestrian flows for the intersection are fewer than 100 pedestrians per hour during the peak hours. Thus, pedestrian flows are expected to be fewer than 100 pedestrians per hour during remaining off peak hours for the highest 8 hours.

Background+Project

Clyde Avenue & Maude Avenue						
Time [hr]	**7:00 AM**	**8:00 AM**	**9:00 AM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major Street (Total)	669	1316	927	472	808	605
Minor Street (One Direction)	180	293	230	562	577	530
Meet 8hr Veh Warrant?	Yes	Yes	Yes	No	Yes	Yes
Pedestrian Counts[1]	<100	<100	<100	<100	<100	<100
Meet Ped. Warrant?	No	No	No	No	No	No

Notes:
1. Pedestrian flows for the intersection are fewer than 100 pedestrians per hour during the peak hours. Thus, pedestrian flows are expected to be fewer than 100 pedestrians per hour during remaining off peak hours for the highest 8 hours.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Ellis St — Critical Approach Speed* (mph) 40

Minor Street: Manila Dr — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)…………………………… ☐ or
In built up area of isolated community of < 10,000 population………………………… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

AM PEAK PERIOD	Existing	Background	Existing + Prj	Background + Prj				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	16.1	16.9	16.2	17.0				
Corresponding Minor Street Approach Volume (veh/hr)	343	355	343	355				
Minor Street Total Delay (veh-hrs)	1.5	1.7	1.5	1.7				
Total Entering Volume (veh/hr)	1325	1432	1355	1462				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

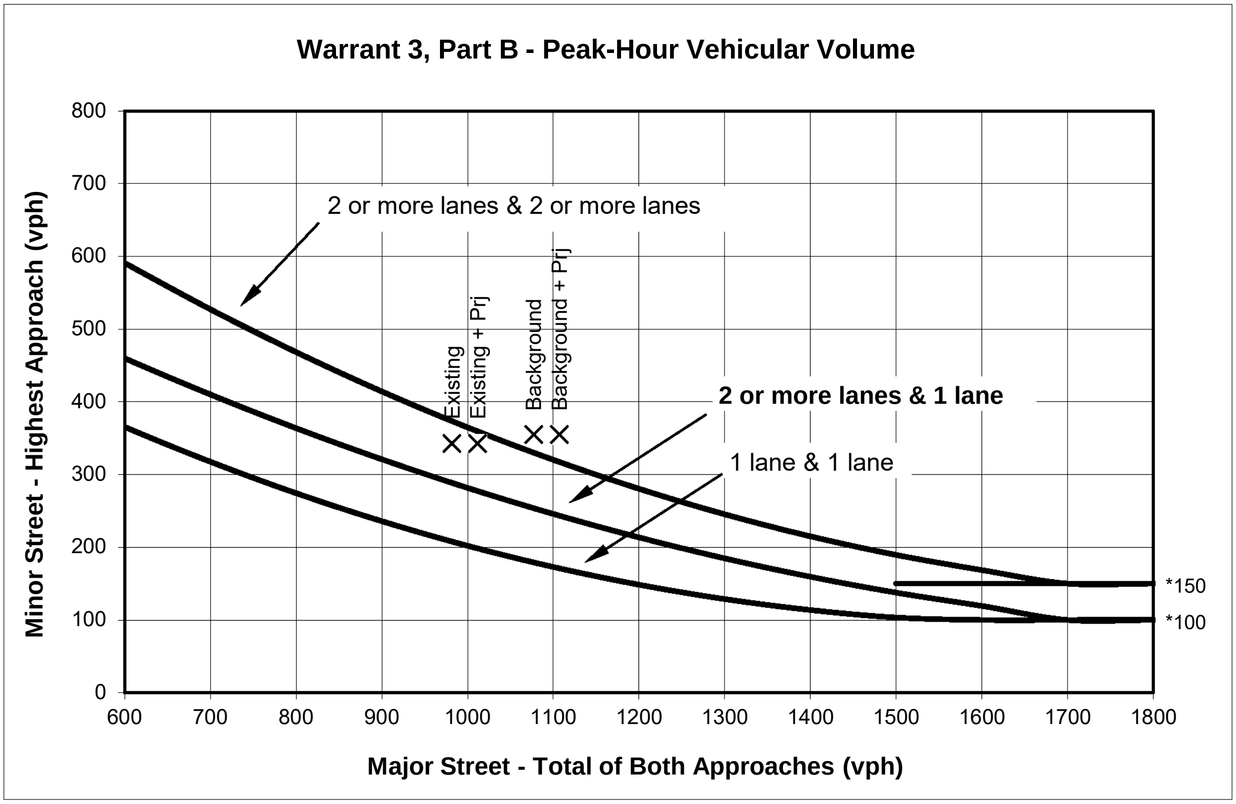
		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Ellis St		X	982	1077	1012	1107				
Minor Street - Highest Approach	Manila Dr	X		343	355	343	355				
Signal Warranted based on Part B?				**Yes**	**Yes**	**Yes**	**Yes**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & Manila Dr	**AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Ellis St		X	982	1077	1012	1107				
Minor Street - Highest Approach	Manila Dr	X		343	355	343	355				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Ellis St — Critical Approach Speed* (mph) 40

Minor Street: Manila Dr — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐ or
In built up area of isolated community of < 10,000 population……………………… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR	Existing	Background	Existing + Prj	Background + Prj			
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB			
Highest Minor Street Average Delay (sec/veh)	23.5	32.4	24.8	34.6			
Corresponding Minor Street Approach Volume (veh/hr)	542	597	542	597			
Minor Street Total Delay (veh-hrs)	3.5	5.4	3.7	5.7			
Total Entering Volume (veh/hr)	950	1024	986	1060			
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	Yes	No	Yes			
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes			
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes			
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**			

PART B

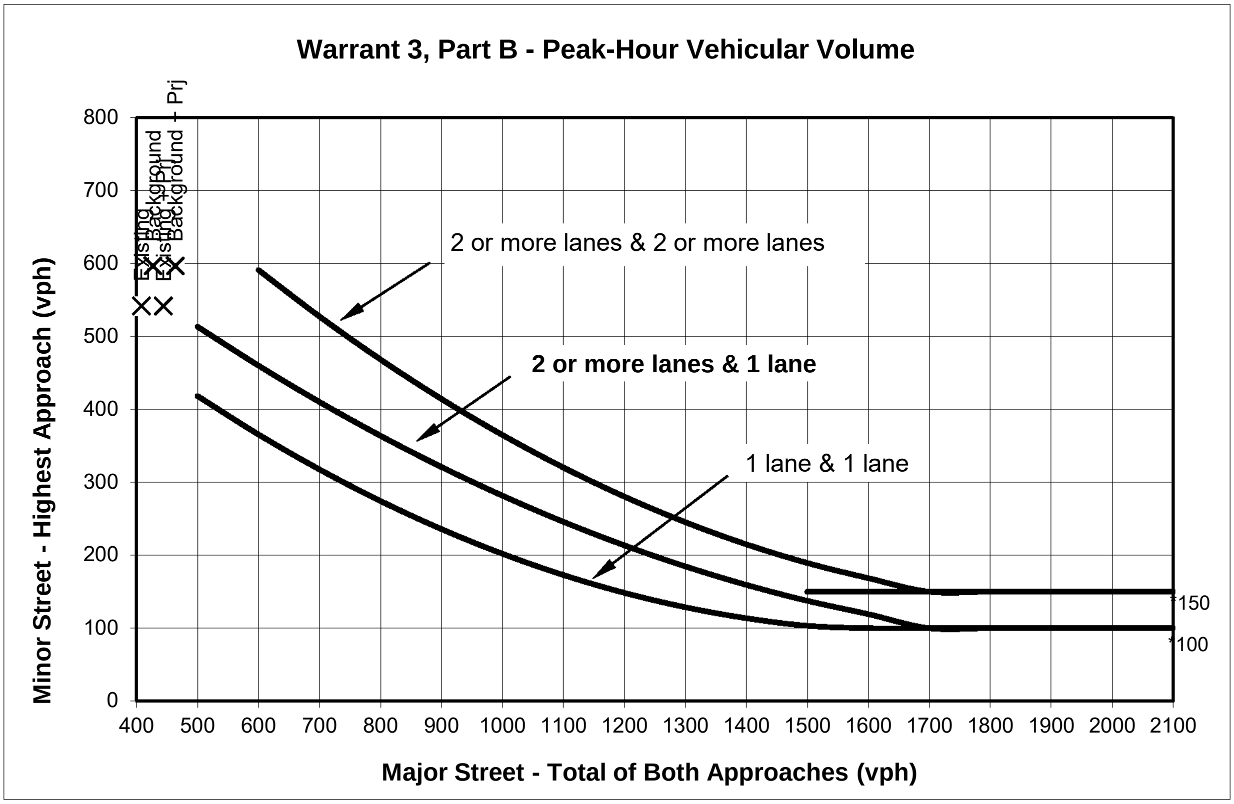
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Background	Existing + Prj	Background + Prj	0:00	0:00	0:00	
Major Street - Both Approaches	Ellis St		X	408	427	444	463	0	0	0	
Minor Street - Highest Approach	Manila Dr	X		542	597	542	597	0	0	0	
Signal Warranted based on Part B?				**No**	**Yes**	**No**	**Yes**	**0**	**0**	**0**	

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & Manila Dr **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Ellis St		X	408	427	444	463				
Minor Street - Highest Approach	Manila Dr	X		542	597	542	597				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**Yes**	**No**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25
Minor Street: Logue Ave — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)………..…..….......…….. ☐ or
In built up area of isolated community of < 10,000 population……....………….… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

AM PEAK PERIOD	Existing	Background	Existing + Prj	Background + Prj				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	10.7	10.8	13.0	13.2				
Corresponding Minor Street Approach Volume (veh/hr)	287	299	423	435				
Minor Street Total Delay (veh-hrs)	0.9	0.9	1.5	1.6				
Total Entering Volume (veh/hr)	375	389	573	587				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	No	No	No				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

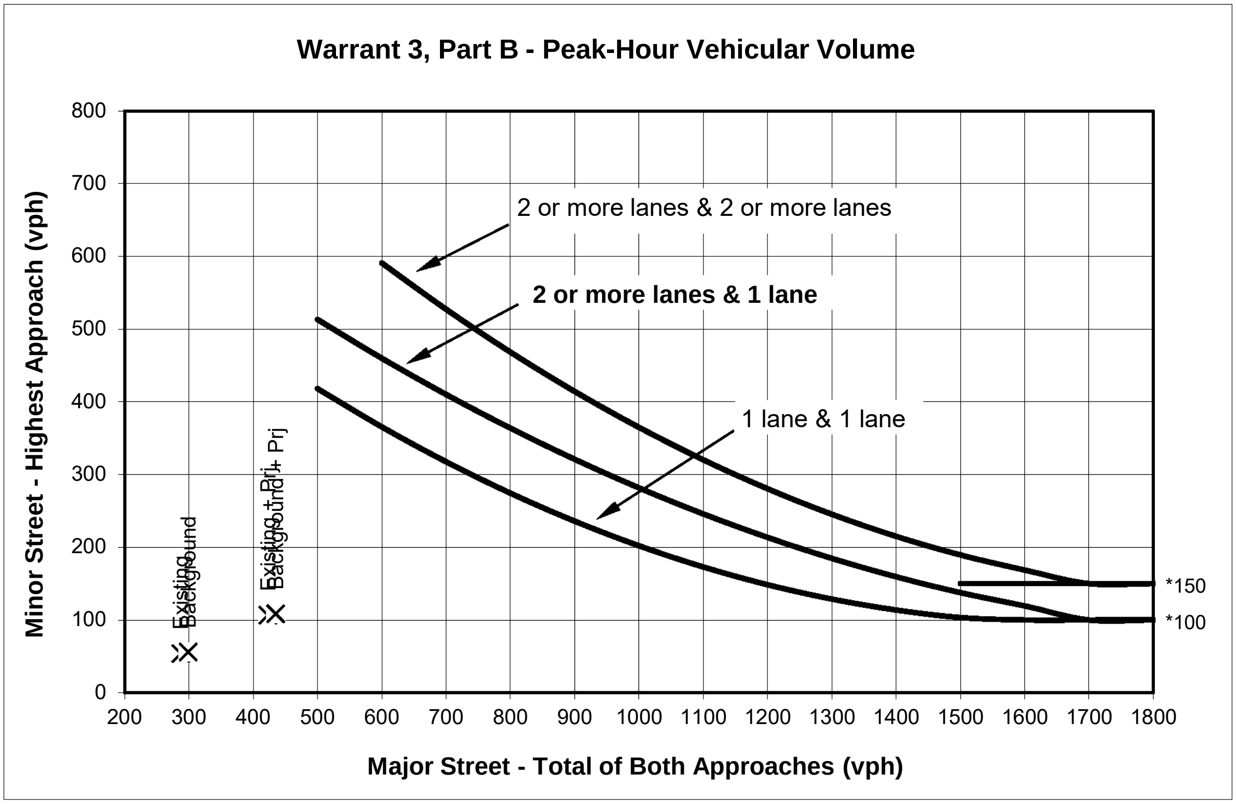
		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		287	299	423	435				
Minor Street - Highest Approach	Logue Ave	X		54	56	107	109				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & Logue Ave **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		287	299	423	435				
Minor Street - Highest Approach	Logue Ave	X		54	56	107	109				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 11/10/21

Major Street: Maude Ave
Minor Street: Logue Ave

Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)………………………… ☐ or
In built up area of isolated community of < 10,000 population………………………… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR

	Existing	Background	Existing + Prj	Background + Prj				
Minor Street Approach Direction w/ Highest Delay	EB	EB	EB	EB				
Highest Minor Street Average Delay (sec/veh)	10.0	10.1	11.1	12.2				
Corresponding Minor Street Approach Volume (veh/hr)	3	3	3	3				
Minor Street Total Delay (veh-hrs)	0.0	0.0	0.0	0.0				
Total Entering Volume (veh/hr)	231	244	441	454				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No	No	No	No				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No	No	No	No				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

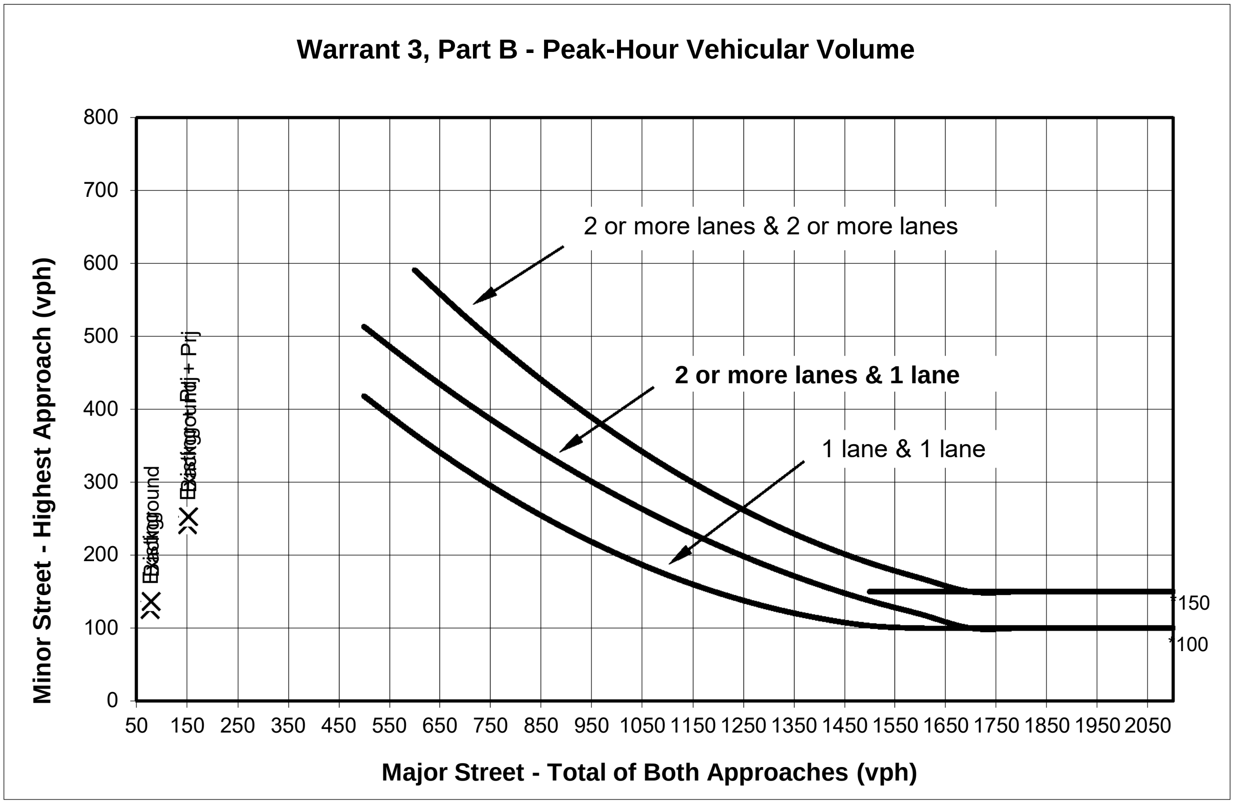
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		77	79	151	153				
Minor Street - Highest Approach	Logue Ave	X		126	137	242	253				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & Logue Ave **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Existing	Background	Existing + Prj	Background + Prj				
Major Street - Both Approaches	Maude Ave	X		77	79	151	153				
Minor Street - Highest Approach	Logue Ave	X		126	137	242	253				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

FOUR WAY STOP SIGN WARRANT
FOR
LOGUE AVENUE AND MAUDE AVENUE (Existing Condition)

I. VOLUME WARRANT

Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 vph** on MINOR STREET for the *same 8 hrs*.
OR
Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 pedestrians per hour** at the intersection for the *same 8 hrs*.

*If intersection is located in residential area, then decrease above volumes by 40%

Time [hr]	7	8	9	16	17	18		
Major Street	80	69	106	94	145	89		
Minor Street	142	278	193	54	83	66		
Total	222	347	299	148	228	155		
Meet Warrant?	No	Yes	No	No	No	No		
Pedestrian Counts[1]	<100	<100	<100	<100	<100	<100		
Meet Ped. Warrant?	No	No	No	No	No	No		

1. Pedestrian flows for the intersection are fewer than 100 pedestrians per hour during the peak hours. Thus, pedestrian flows are expected to be fewer than 100 pedestrian per hour during remaining off peak hours for the highest 8 hours.

WARRANT MET? No. The volumes were collected on September 28, 2021 for the highest 4 hours and increased by a factor of 1.83 in the AM peak hour and 1.85 in the PM peak hour to reflect the volumes that would occur under typical conditions (pre-Covid-19). The total approach volumes for the AM peak hours are fewer than 300 vph, and total intersection pedestrian volumes are fewer than 100 units per hour. (The intersection does not qualify as a residential area.)

II. ACCIDENT WARRANT:

3 or more reported accidents in *last one (1) year*
Number of actual correctable accidents in the last year: 1 (1/11/2018 - 12/31/2019)

WARRANT MET? No

III. LINE OF SIGHT WARRANT:

150 feet or less on one or more approaches of the MAJOR STREET
Actual field conditions: On-street parking is permitted on Logue Avenue and Maude Avenue. Vehicles legally parked on the street do not restrict the line of sight distance for approaching vehicles on Maude Avenue. Vehicles on Maude Avenue would have at least 150 feet looking both ways on Logue Avenue.

WARRANT MET? No

An intersection qualifies as a residential one, if ALL of the following conditions exist:

- Both streets have residential frontage and have a 25 mph speed limit. Both Logue Avenue and Maude Avenue do not have a residential frontage.
- Neither street is an adopted through street as defined in the CVC.
- Neither street has more than one travel lane in each direction.
- No existing stop sign or traffic signal within 500′ along the major street.
- The installation of a 4-way stop sign is compatible with overall traffic circulation.

CONCLUSION: The intersection does not meet any warrant.

Date: October 22, 2021 Study done by: Hexagon Transportation Consultants

FOUR WAY STOP SIGN WARRANT

FOR

LOGUE AVENUE AND MAUDE AVENUE (Existing Plus Project Condition)

I. VOLUME WARRANT

Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 vph** on MINOR STREET for the *same 8 hrs*.

OR

Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 pedestrians per hour** at the intersection for the *same 8 hrs*.

*If intersection is located in residential area, then decrease above volumes by 40%

Time [hr]	7	8	9	16	17	18		
Major Street	127	109	168	182	281	172		
Minor Street	211	414	287	102	157	125		
Total	338	523	455	284	438	297		
Meet Warrant?	Yes	Yes	Yes	No	Yes	No		
Pedestrian Counts[1]	<100	<100	<100	<100	<100	<100		
Meet Ped. Warrant?	No	No	No	No	No	No		

1. Pedestrian flows for the intersection are fewer than 100 pedestrians per hour during the peak hours. Thus, pedestrian flows are expected to be fewer than 100 pedestrian per hour during remaining off peak hours for the highest 8 hours.

WARRANT MET? No. The volumes were collected on September 28, 2021 for the highest 6 hours and increased by a factor of 1.83 in the AM peak hour and 1.85 in the PM peak hour to reflect the volumes that would occur under typical conditions (pre-Covid-19). Project trips were added to each peak hour based on the hourly proportion of volumes. The total approach volumes for the two of the highest 6 hours are fewer than 300 vph, and total intersection pedestrian volumes are fewer than 100 units per hour. (The intersection does not qualify as a residential area.)

II. ACCIDENT WARRANT:

3 or more reported accidents in *last one (1) year*

Number of actual correctable accidents in the last year: 1 (1/11/2018 - 12/31/2019)

WARRANT MET? No

III. LINE OF SIGHT WARRANT:

150 feet or less on one or more approaches of the MAJOR STREET

Actual field conditions: On-street parking is permitted on Logue Avenue and Maude Avenue. Vehicles legally parked on the street do not restrict the line of sight distance for approaching vehicles on Maude Avenue. Vehicles on Maude Avenue would have at least 150 feet looking both ways on Logue Avenue.

WARRANT MET? No

An intersection qualifies as a residential one, if ALL of the following conditions exist:

- Both streets have residential frontage and have a 25 mph speed limit. Both Logue Avenue and Maude Avenue do not have a residential frontage.
- Neither street is an adopted through street as defined in the CVC.
- Neither street has more than one travel lane in each direction.
- No existing stop sign or traffic signal within 500′ along the major street.
- The installation of a 4-way stop sign is compatible with overall traffic circulation.

CONCLUSION: The intersection does not meet any warrant.

Date: November 12, 2021 Study done by: Hexagon Transportation Consultants

FOUR WAY STOP SIGN WARRANT
FOR
LOGUE AVENUE AND MAUDE AVENUE (Background Plus Project Condition)

I. VOLUME WARRANT

Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 vph** on MINOR STREET for the *same 8 hrs*.
OR
Min. **300 vph** on ALL APPROACHES for *highest 8 hrs* AND min. **100 pedestrians per hour** at the intersection for the *same 8 hrs*.

*If intersection is located in residential area, then decrease above volumes by 40%

Time [hr]	7	8	9	16	17	18		
Major Street	129	130	170	189	301	179		
Minor Street	217	426	295	103	159	127		
Total	346	556	465	292	460	306		
Meet Warrant?	Yes	Yes	Yes	No	Yes	Yes		
Pedestrian Counts[1]	<100	<100	<100	<100	<100	<100		
Meet Ped. Warrant?	No	No	No	No	No	No		

1. Pedestrian flows for the intersection are fewer than 100 pedestrians per hour during the peak hours. Thus, pedestrian flows are expected to be fewer than 100 pedestrian per hour during remaining off peak hours for the highest 8 hours.

WARRANT MET? No. The total approach volumes for one of the highest 6 hours are fewer than 300 vph, and total intersection pedestrian volumes are fewer than 100 units per hour. (The intersection does not qualify as a residential area.)

II. ACCIDENT WARRANT:

3 or more reported accidents in *last one (1) year*
Number of actual correctable accidents in the last year: 1 (1/11/2018 - 12/31/2019)

WARRANT MET? No

III. LINE OF SIGHT WARRANT:

150 feet or less on one or more approaches of the MAJOR STREET
Actual field conditions: On-street parking is permitted on Logue Avenue and Maude Avenue. Vehicles legally parked on the street do not restrict the line of sight distance for approaching vehicles on Maude Avenue. Vehicles on Maude Avenue would have at least 150 feet looking both ways on Logue Avenue.

WARRANT MET? No

An intersection qualifies as a residential one, if ALL of the following conditions exist:

- Both streets have residential frontage and have a 25 mph speed limit. Both Logue Avenue and Maude Avenue do not have a residential frontage.
- Neither street is an adopted through street as defined in the CVC.
- Neither street has more than one travel lane in each direction.
- No existing stop sign or traffic signal within 500′ along the major street.
- The installation of a 4-way stop sign is compatible with overall traffic circulation.

CONCLUSION: The intersection does not meet any warrant.

Date: November 12, 2021 Study done by: Hexagon Transportation Consultants

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Ellis St — Critical Approach Speed* (mph) 40

Minor Street: O1 Dwy — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)………………………… ☐ or

In built up area of isolated community of < 10,000 population…………………… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	26.4							
Corresponding Minor Street Approach Volume (veh/hr)	38							
Minor Street Total Delay (veh-hrs)	0.3							
Total Entering Volume (veh/hr)	1440							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

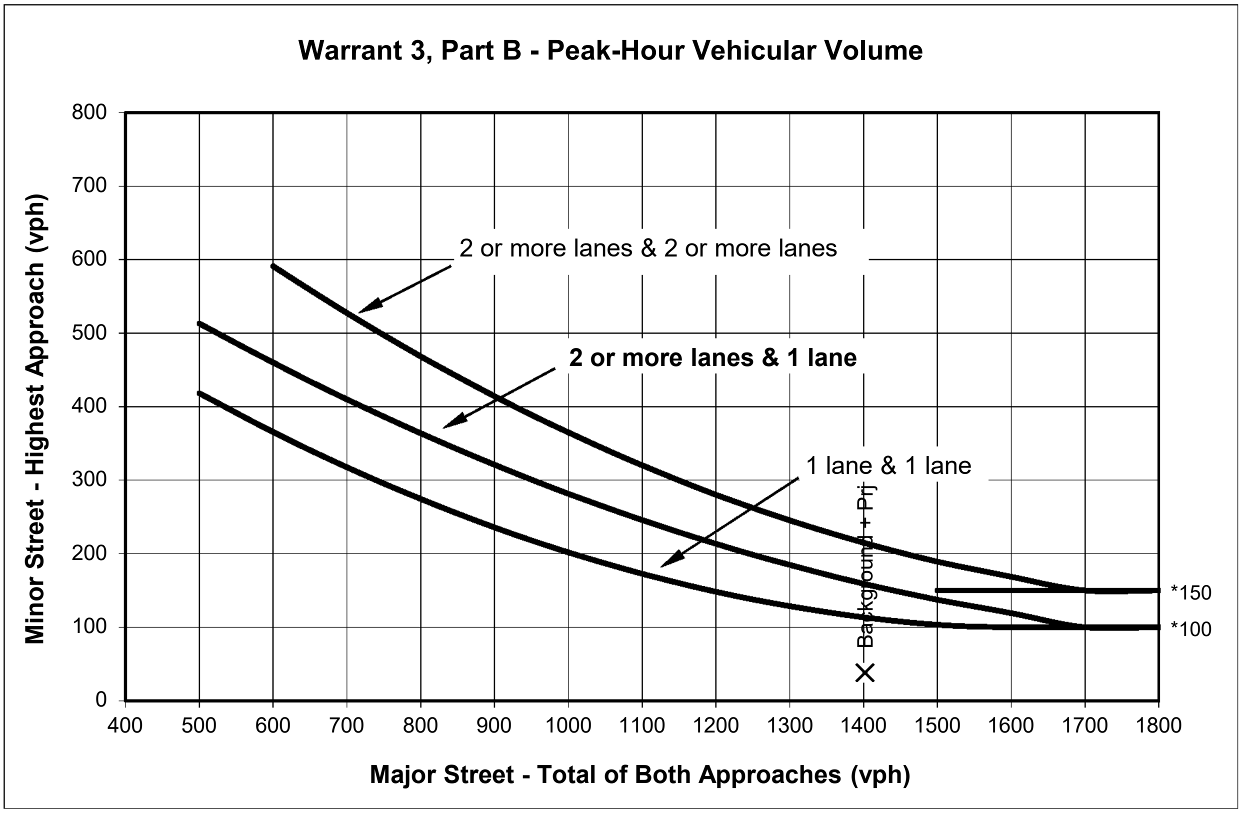
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1402							
Minor Street - Highest Approach	O1 Dwy	X		38							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & O1 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1402							
Minor Street - Highest Approach	O1 Dwy	X		38							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Ellis St — Critical Approach Speed* (mph) 40

Minor Street: O1 Dwy — Critical Approach Speed* (mph) 25

Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)…………………………… ☐ or

In built up area of isolated community of < 10,000 population…………………… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	16.7							
Corresponding Minor Street Approach Volume (veh/hr)	192							
Minor Street Total Delay (veh-hrs)	0.9							
Total Entering Volume (veh/hr)	1438							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

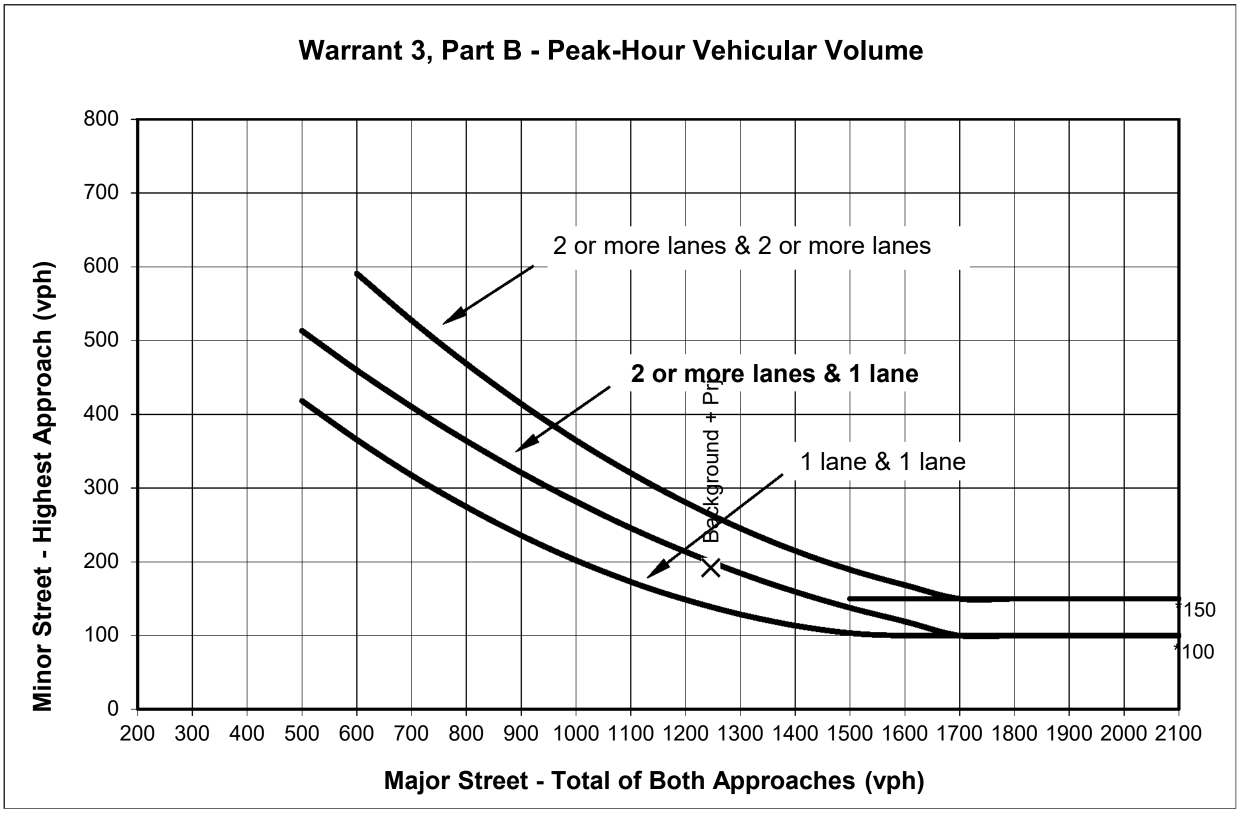
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1246							
Minor Street - Highest Approach	O1 Dwy	X		192							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & O1 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1246							
Minor Street - Highest Approach	O1 Dwy	X		192							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Ellis St — Critical Approach Speed* (mph) 40

Minor Street: R1/R2 Dwy — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐
or — **Rural (R)**
In built up area of isolated community of < 10,000 population……………………… ☐

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	33.1							
Corresponding Minor Street Approach Volume (veh/hr)	186							
Minor Street Total Delay (veh-hrs)	1.7							
Total Entering Volume (veh/hr)	1441							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

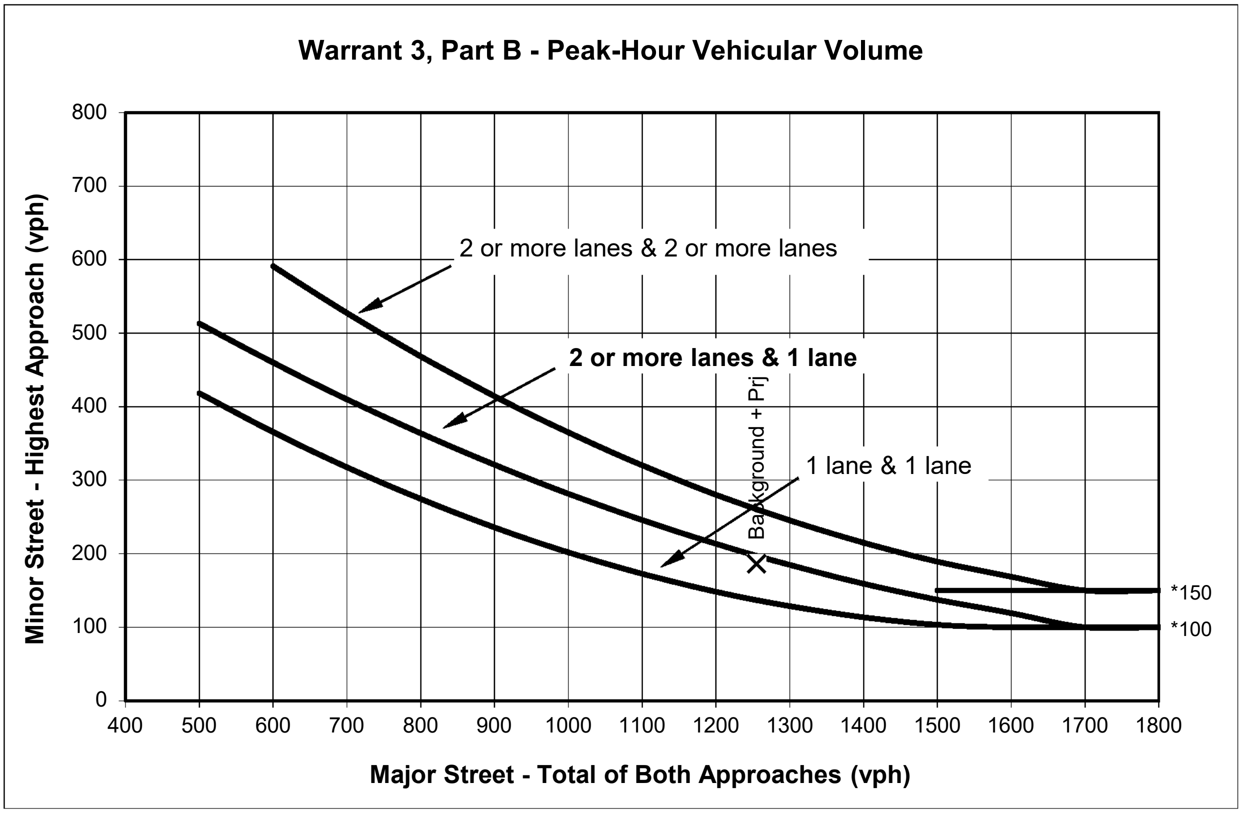
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1255							
Minor Street - Highest Approach	R1/R2 Dwy	X		186							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & R1/R2 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1255							
Minor Street - Highest Approach	R1/R2 Dwy	X		186							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Ellis St Critical Approach Speed* (mph) 40
Minor Street: R1/R2 Dwy Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)………………………… ☐ or **Rural (R)**
In built up area of isolated community of < 10,000 population……………………… ☐

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour
The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A
(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	29.7							
Corresponding Minor Street Approach Volume (veh/hr)	160							
Minor Street Total Delay (veh-hrs)	1.3							
Total Entering Volume (veh/hr)	1562							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

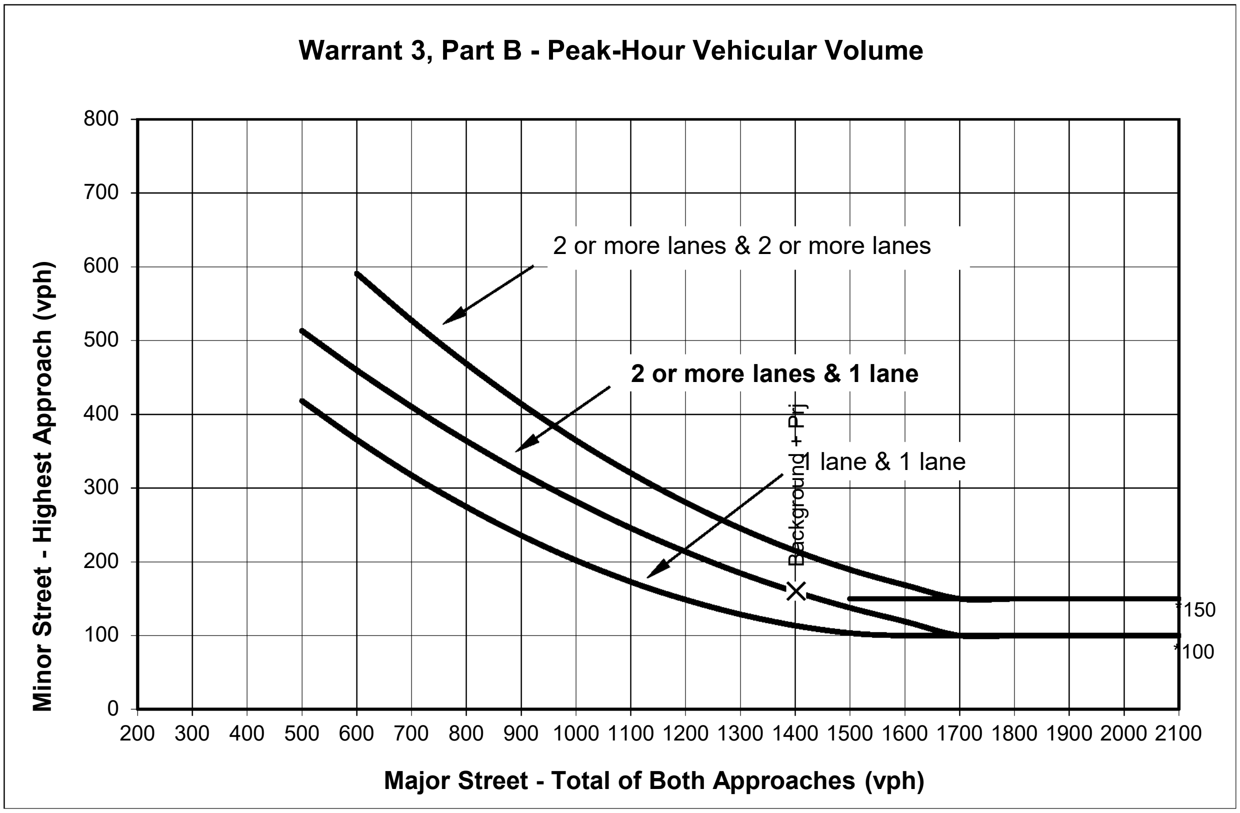
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1402							
Minor Street - Highest Approach	R1/R2 Dwy	X		160							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Ellis St & R1/R2 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Ellis St		X	1402							
Minor Street - Highest Approach	R1/R2 Dwy	X		160							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25
Minor Street: R3/R4 Dwy — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐ or **Rural (R)**
In built up area of isolated community of < 10,000 population…………………… ☐

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Background + Prj							
Minor Street Approach Direction w/ Highest Delay	SB							
Highest Minor Street Average Delay (sec/veh)	12.5							
Corresponding Minor Street Approach Volume (veh/hr)	105							
Minor Street Total Delay (veh-hrs)	0.4							
Total Entering Volume (veh/hr)	579							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No							
Signal Warranted based on Part A?	**No**							

PART B

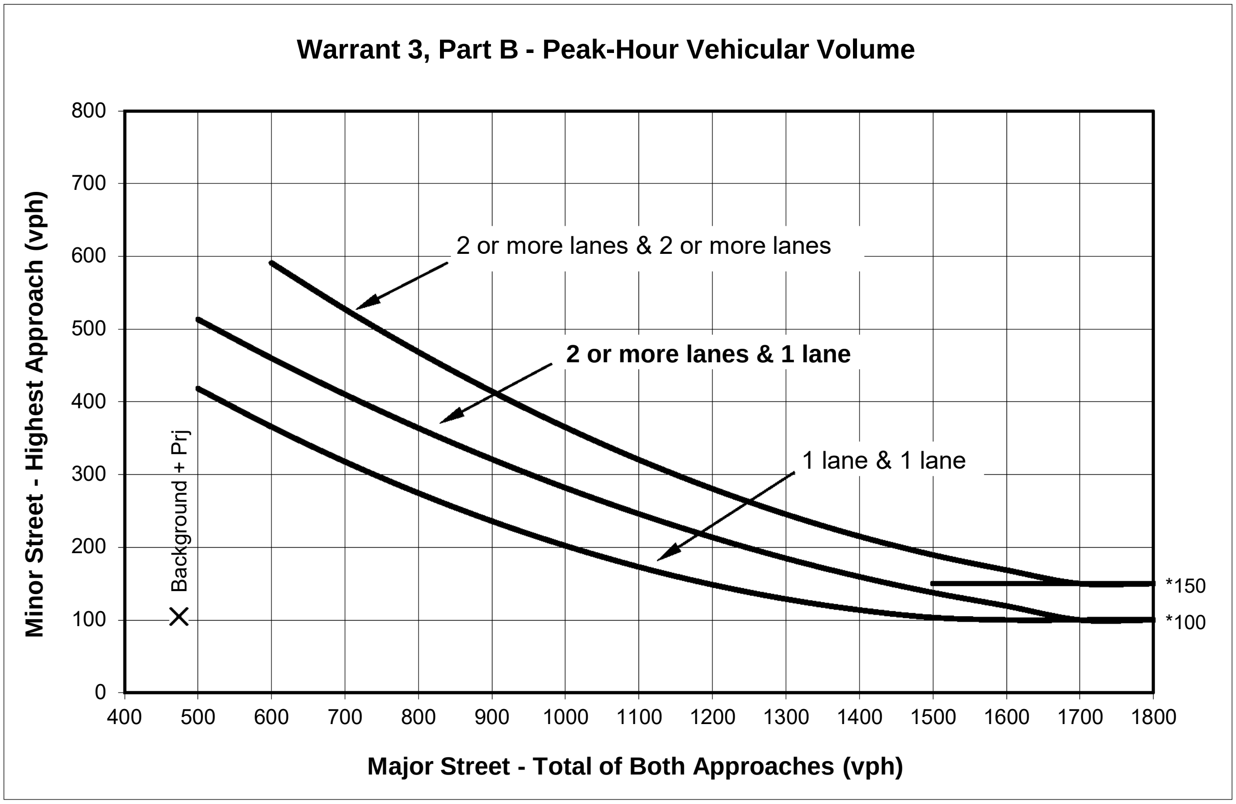
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		474							
Minor Street - Highest Approach	R3/R4 Dwy	X		105							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & R3/R4 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		474							
Minor Street - Highest Approach	R3/R4 Dwy	X		105							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25
Minor Street: R3/R4 Dwy — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐ or
In built up area of isolated community of < 10,000 population……………………… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour
The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A
(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	SB							
Highest Minor Street Average Delay (sec/veh)	11.0							
Corresponding Minor Street Approach Volume (veh/hr)	72							
Minor Street Total Delay (veh-hrs)	0.2							
Total Entering Volume (veh/hr)	505							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No							
Signal Warranted based on Part A?	**No**							

PART B

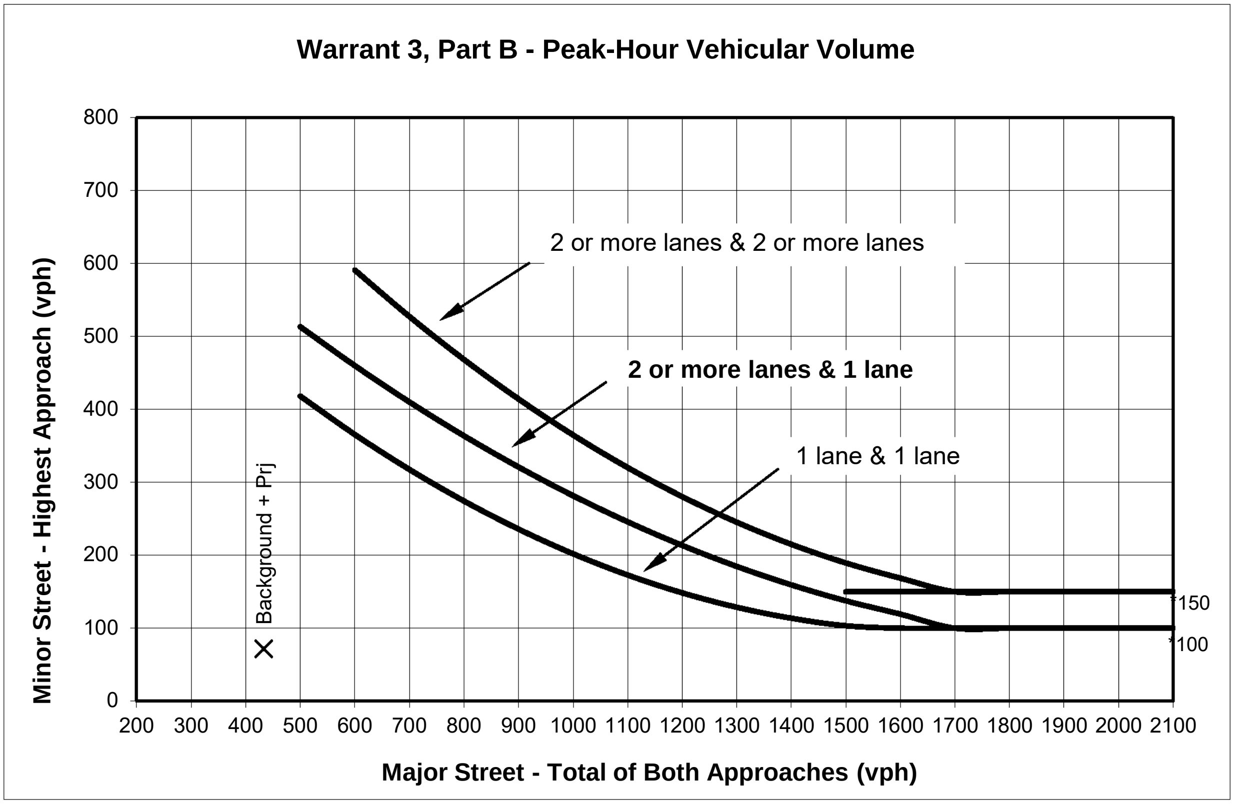
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		433							
Minor Street - Highest Approach	R3/R4 Dwy	X		72							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & R3/R4 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		433							
Minor Street - Highest Approach	R3/R4 Dwy	X		72							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25

Minor Street: R4/R5 Dwy — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)……..…...….......…….. ☐ or ☐ **Rural (R)**

In built up area of isolated community of < 10,000 population……....…………..

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	SB							
Highest Minor Street Average Delay (sec/veh)	11.3							
Corresponding Minor Street Approach Volume (veh/hr)	126							
Minor Street Total Delay (veh-hrs)	0.4							
Total Entering Volume (veh/hr)	491							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No							
Signal Warranted based on Part A?	**No**							

PART B

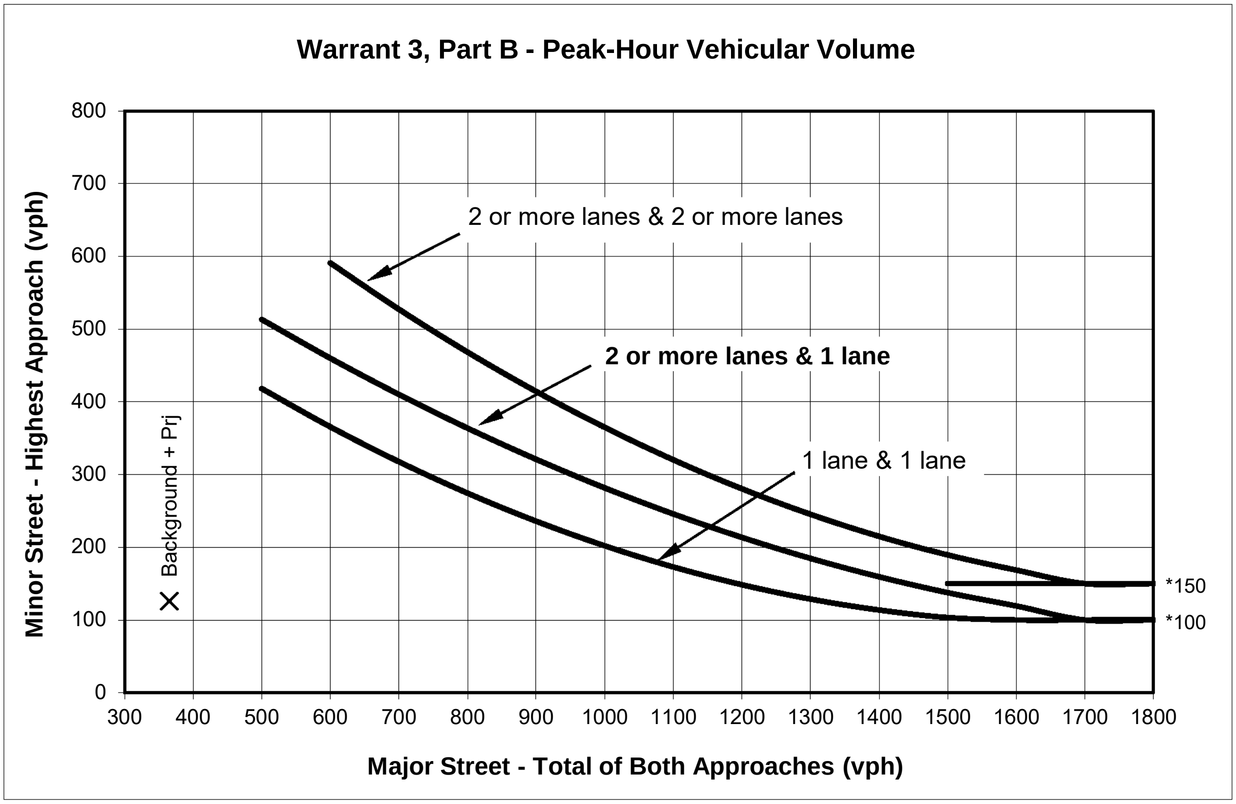
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		365							
Minor Street - Highest Approach	R4/R5 Dwy	X		126							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & R4/R5 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		365							
Minor Street - Highest Approach	R4/R5 Dwy	X		126							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Maude Ave — Critical Approach Speed* (mph) 25

Minor Street: R4/R5 Dwy — Critical Approach Speed* (mph) 25

Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)…………………………. ☐ or — **Rural (R)**

In built up area of isolated community of < 10,000 population……………………. ☐

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	SB							
Highest Minor Street Average Delay (sec/veh)	11.0							
Corresponding Minor Street Approach Volume (veh/hr)	87							
Minor Street Total Delay (veh-hrs)	0.3							
Total Entering Volume (veh/hr)	456							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	No							
Signal Warranted based on Part A?	**No**							

PART B

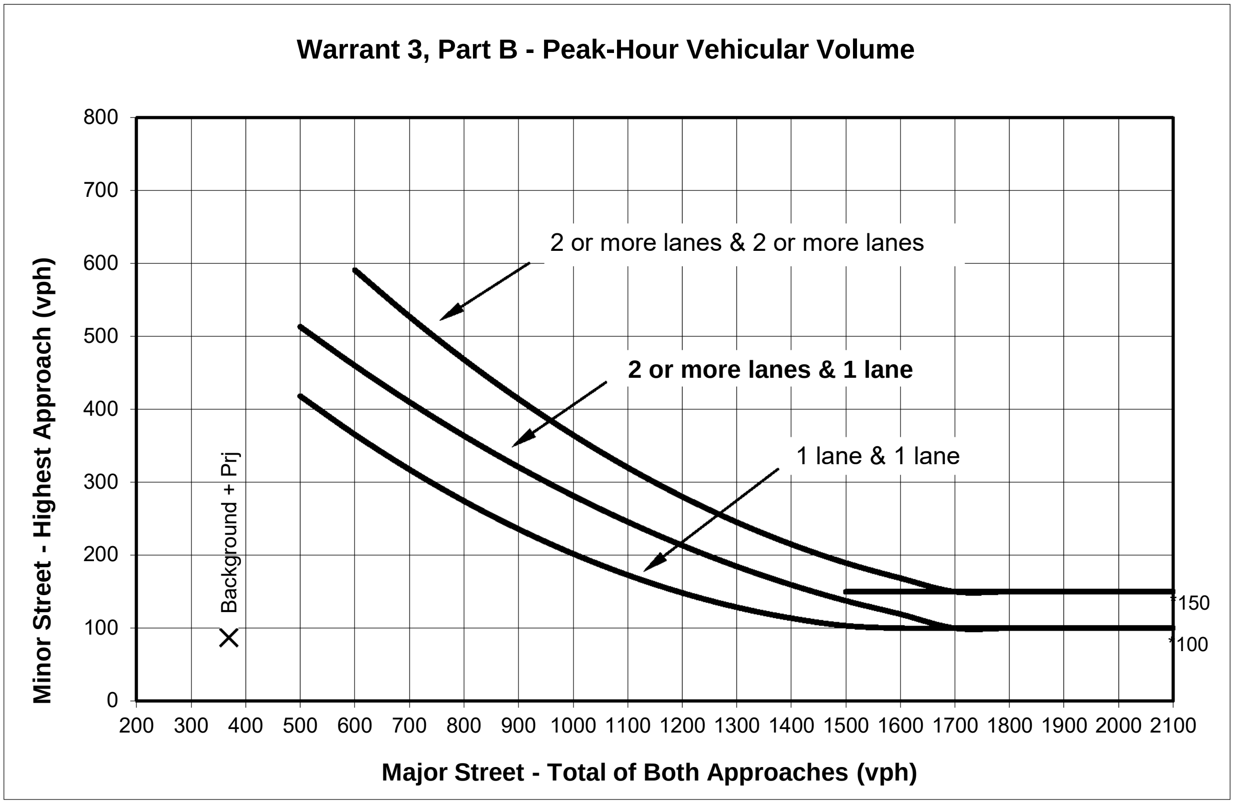
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		369							
Minor Street - Highest Approach	R4/R5 Dwy	X		87							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Maude Ave & R4/R5 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Maude Ave	X		369							
Minor Street - Highest Approach	R4/R5 Dwy	X		87							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Clyde Ave — Critical Approach Speed* (mph) 25

Minor Street: O4/O5 Dwy — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)………………………… ☐ or

In built up area of isolated community of < 10,000 population……………………… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	19.3							
Corresponding Minor Street Approach Volume (veh/hr)	60							
Minor Street Total Delay (veh-hrs)	0.3							
Total Entering Volume (veh/hr)	919							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

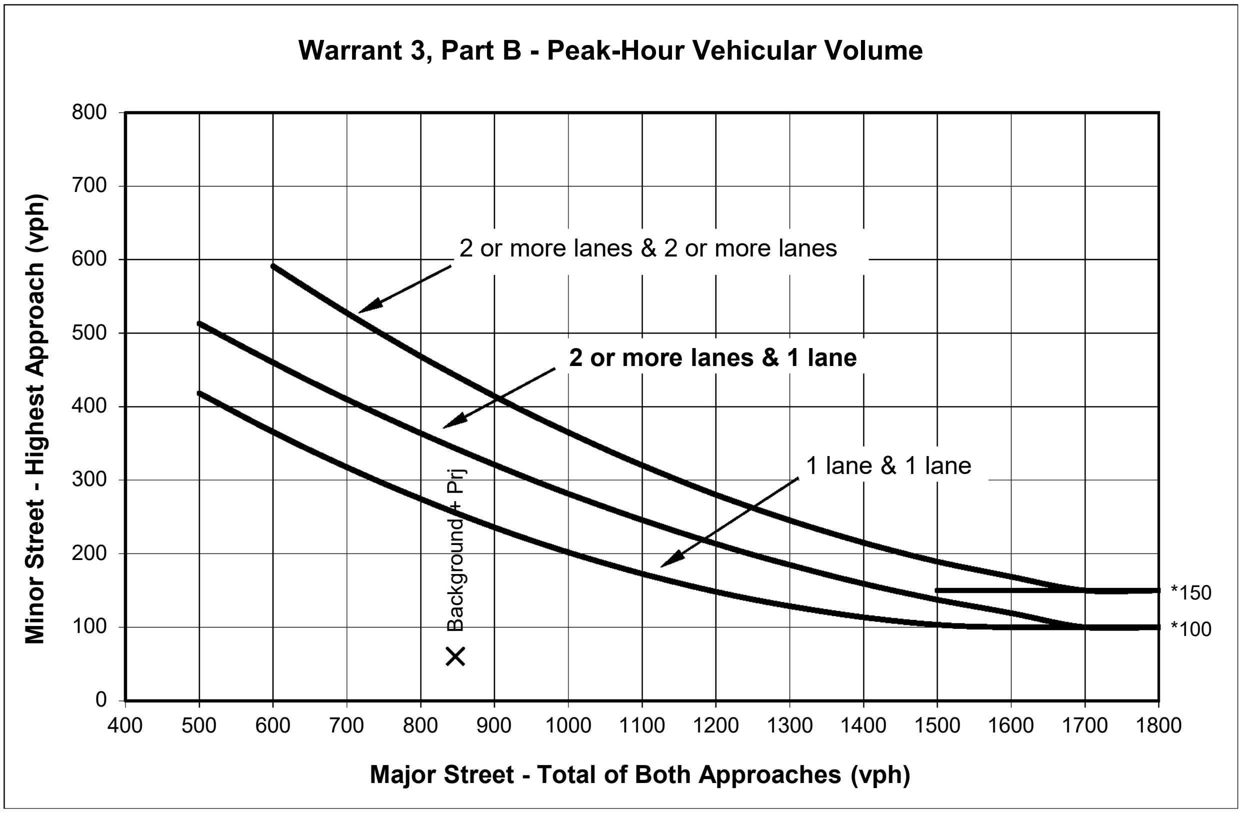
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		847							
Minor Street - Highest Approach	O4/O5 Dwy	X		60							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Clyde Ave & O4/O5 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		847							
Minor Street - Highest Approach	O4/O5 Dwy	X		60							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Clyde Ave — Critical Approach Speed* (mph) 25
Minor Street: O4/O5 Dwy — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)…………………………. ☐ or
In built up area of isolated community of < 10,000 population…………………….. ☐ } Rural (R)

☑ Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	17.4							
Corresponding Minor Street Approach Volume (veh/hr)	312							
Minor Street Total Delay (veh-hrs)	1.5							
Total Entering Volume (veh/hr)	778							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

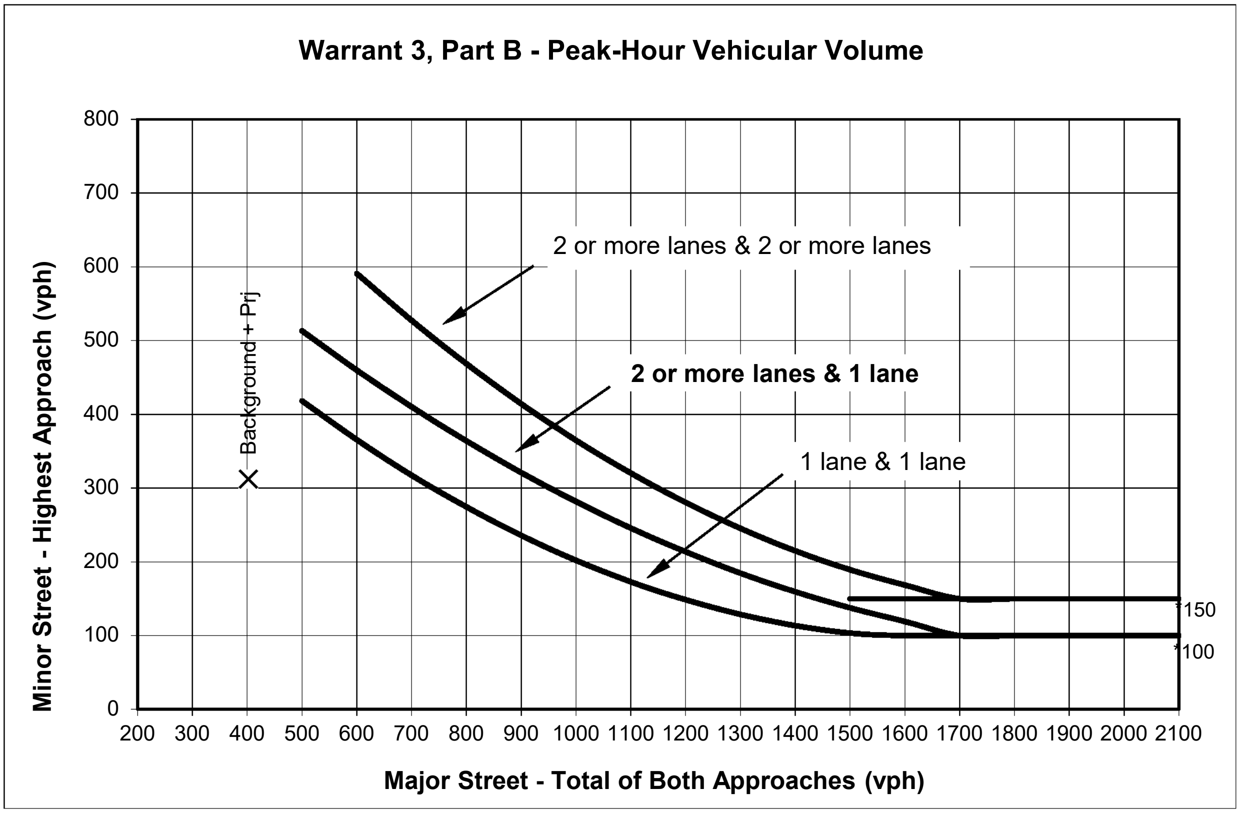
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		402							
Minor Street - Highest Approach	O4/O5 Dwy	X		312							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Clyde Ave & O4/O5 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		402							
Minor Street - Highest Approach	O4/O5 Dwy	X		312							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Clyde Ave — Critical Approach Speed* (mph) 25

Minor Street: P2 Dwy — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)……………………… ☐ or **Rural (R)**

In built up area of isolated community of < 10,000 population…………………… ☐

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	14.8							
Corresponding Minor Street Approach Volume (veh/hr)	16							
Minor Street Total Delay (veh-hrs)	0.1							
Total Entering Volume (veh/hr)	846							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

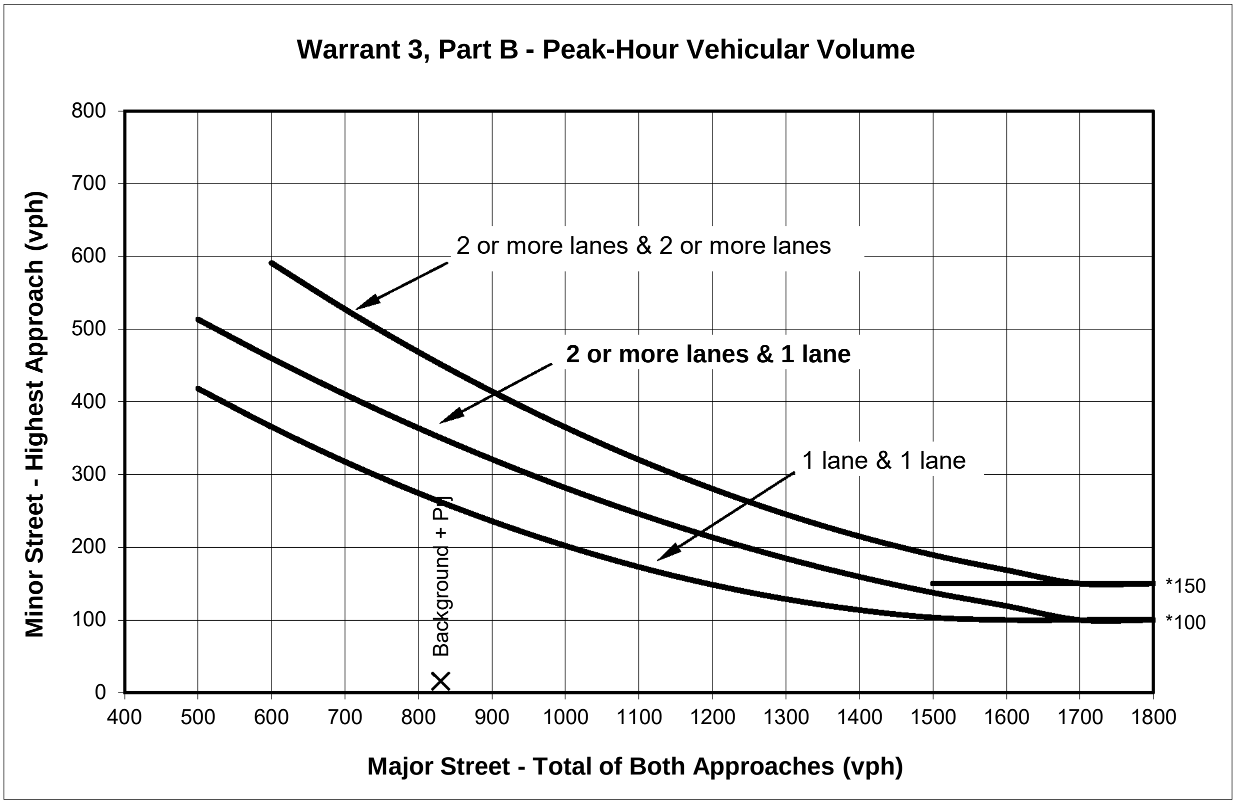
		Approach Lanes: One	Approach Lanes: 2 or More	AM PEAK PERIOD: Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		830							
Minor Street - Highest Approach	P2 Dwy	X		16							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Clyde Ave & P2 Dwy **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes One	Approach Lanes 2 or More	AM PEAK PERIOD Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		830							
Minor Street - Highest Approach	P2 Dwy	X		16							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Middlefield Park Master Plan

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: JL date: 10/18/21

Major Street: Clyde Ave — Critical Approach Speed* (mph) 25
Minor Street: P2 Dwy — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)…………………………… ☐ or Rural (R)
In built up area of isolated community of < 10,000 population…………………… ☐

☑ Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour
The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A
(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR: Background + Prj							
Minor Street Approach Direction w/ Highest Delay	WB							
Highest Minor Street Average Delay (sec/veh)	12.6							
Corresponding Minor Street Approach Volume (veh/hr)	86							
Minor Street Total Delay (veh-hrs)	0.3							
Total Entering Volume (veh/hr)	696							
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No							
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No							
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes							
Signal Warranted based on Part A?	**No**							

PART B

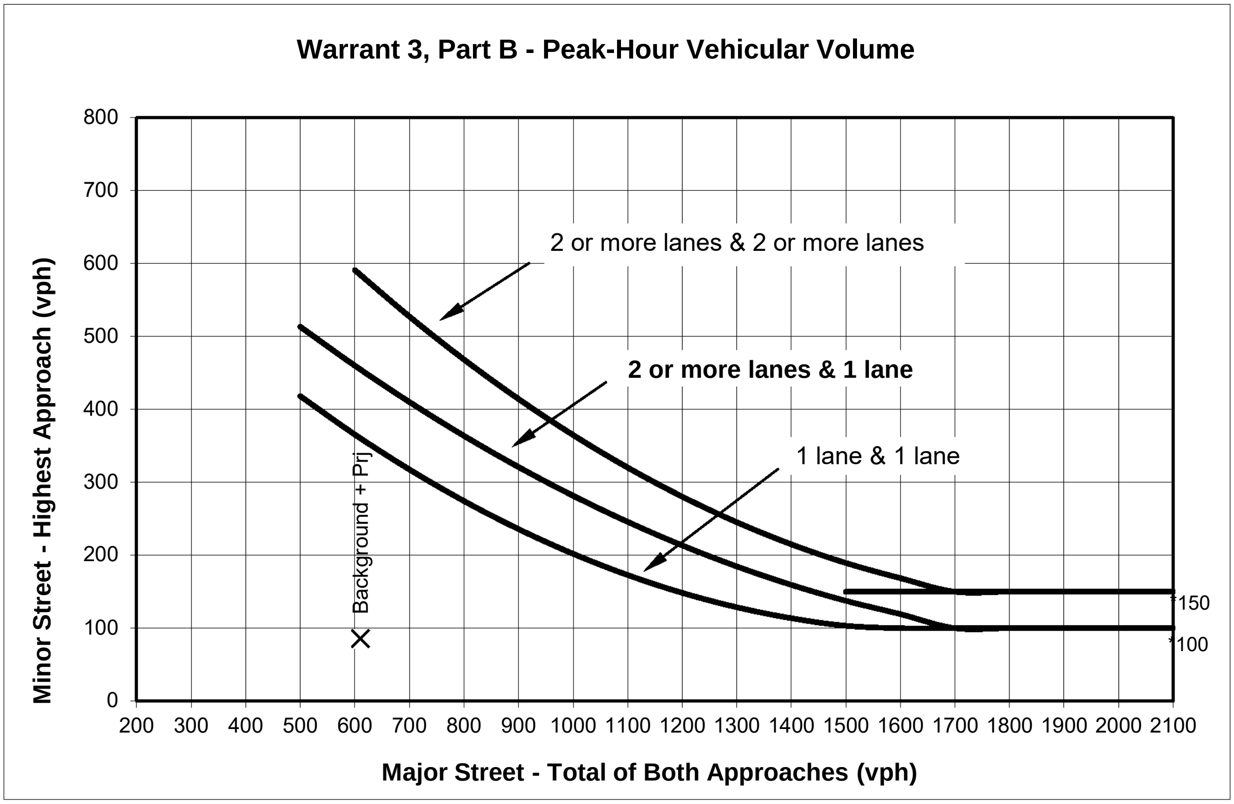
		Approach Lanes: One	Approach Lanes: 2 or More	PM PEAK HOUR: Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		610							
Minor Street - Highest Approach	P2 Dwy	X		86							
Signal Warranted based on Part B?				**No**							

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Middlefield Park Master Plan

Clyde Ave & P2 Dwy **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)* .

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

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Background + Prj							
Major Street - Both Approaches	Clyde Ave	X		610							
Minor Street - Highest Approach	P2 Dwy	X		86							
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Appendix F

Pedestrian Midblock Crossing Treatment Analysis

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)

Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Ellis Street
Analysis Date:	2/3/2022	Minor Street or Location:	north of O1
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	750-1000
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	1408
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00035\ V_{maj\text{-}s}^2 - 0.80083\ V_{maj\text{-}s} + 529.197)/0.75$ OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	127
If 3b < 93, then enter 93. If 3b ≥ 93, then enter 3b.	3c	127
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	127
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	
Major road flow rate (veh/s), $v = (V_{maj\text{-}d}/0.7)/3600$ OR [(4e/0.7)/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	
Total pedestrian delay (h), $Dp = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
$D_p < 5.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)

Analyst and Site Information

Analyst:	Jocelyn Lee	Major Street:	Ellis Street
Analysis Date:	2/3/2022	Minor Street or Location:	north of O1
Data Collection Date:		Peak Hour:	PM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?

Peak-hour pedestrian volume (ped/h), Vp	2a	750-1000
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		

Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?

Major road volume, total of both approaches during peak hour (veh/h), V_{maj-s}	3a	1289
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00035\ V_{maj-s}^{2} - 0.80083\ V_{maj-s} + 529.197)/0.75$ OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	105
If 3b < 93, then enter 93. If 3b ≥ 93, then enter 3b.	3c	105
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	105
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		

Step 4: Estimate pedestrian delay.

Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), V_{maj-d}	4e	
Major road flow rate (veh/s), $v = (V_{maj-d}/0.7)/3600$ OR [(4e/0.7)/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	
Total pedestrian delay (h), $Dp = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	

Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.

Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
$D_p < 5.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Ellis Street
Analysis Date:	2/3/2022	Minor Street or Location:	north of O1
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	126
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	1408
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00035\, V_{maj\text{-}s}^{2} - 0.80083\, V_{maj\text{-}s} + 529.197)/0.75$ OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	127
If 3b < 93, then enter 93. If 3b ≥ 93, then enter 3b.	3c	127
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	127
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	30
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	12
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	1408
Major road flow rate (veh/s), $v = (V_{maj\text{-}d}/0.7)/3600$ OR [(4e/0.7)/3600]	4f	0.56
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\, t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	1466.245556
Total pedestrian delay (h), $Dp = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	40.72904323
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
$D_p < 5.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Ellis Street
Analysis Date:	2/3/2022	Minor Street or Location:	north of O1
Data Collection Date:		Peak Hour:	PM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	104
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	1289
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = (0.00035 $V_{maj\text{-}s}^2$ – 0.80083 $V_{maj\text{-}s}$ + 529.197)/0.75 OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	105
If 3b < 93, then enter 93. If 3b ≥ 93, then enter 3b.	3c	105
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	105
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	30
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), t_c = (L/Sp) + t_s OR [(4a/4b) + 4c)]	4d	12
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	1289
Major road flow rate (veh/s), v = ($V_{maj\text{-}d}$/0.7)/3600 OR [(4e/0.7)/3600]	4f	0.36
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]	4g	194.079523
Total pedestrian delay (h), Dp = (d_p × V_p)/3,600 OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	5.391097862
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
D_p ≥ 21.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Middlefield Road
Analysis Date:	2/3/2022	Minor Street or Location:	West of LRT tracks
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	1-100
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	2050
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00035\ V_{maj\text{-}s}^2 – 0.80083\ V_{maj\text{-}s} + 529.197)/0.75$ OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	478
If 3b < 93, then enter 133. If 3b ≥ 93, then enter 3b.	3c	478
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	478
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	42
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	15
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	1307
Major road flow rate (veh/s), $v = (V_{maj\text{-}d}/0.7)/3600$ OR [(4e/0.7)/3600]	4f	0.52
Average pedestrian delay (s/person), $d_p = (e^{vtc} – v\ t_c – 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]	4g	4676.542265
Total pedestrian delay (h), Dp = $(d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	129.9039518
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 2: PEAK-HOUR, EXCEEDS 35 MPH (55 KM/H)			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Middlefield Road
Analysis Date:	2/3/2022	Minor Street or Location:	West of LRT tracks
Data Collection Date:		Peak Hour:	PM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	1-100
If 2a ≥ 14 ped/h, then go to Step 3.		
If 2a < 14 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	2029
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00035\ V_{maj\text{-}s}^2 - 0.80083\ V_{maj\text{-}s} + 529.197)/0.75$ OR [(0.00035 *3a* 2 – 0.80083 *3a* + 529.197)/0.75]	3b	460
If 3b < 93, then enter 133. If 3b ≥ 93, then enter 3b.	3c	460
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	460
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	42
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	15
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	1151
Major road flow rate (veh/s), $v = (V_{maj\text{-}d}/0.7)/3600$ OR [(4e/0.7)/3600]	4f	0.46
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	2139.945034
Total pedestrian delay (h), $Dp = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	59.44291761
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
$D_p < 5.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED

Figure A-3. Worksheet 2.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS

Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Logue Avenue
Analysis Date:	10/25/2021	Minor Street or Location:	north of R3
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	750-1000
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	123
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00021\ V_{maj\text{-}s}^2 - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]	3b	862
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	862
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	862
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR $[(e^{4f \times 4d} - 4f \times 4d - 1) / 4f]$	4g	
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR $5.3\text{ h} \leq D_p < 21.3$ h and Comp = low	RED
$1.3\text{ h} \leq D_p < 5.3$ h (Comp = high or low) OR $5.3\text{ h} \leq D_p < 21.3$ h and Comp = high	ACTIVE OR ENHANCED
$D_p < 1.3$ h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Logue Avenue
Analysis Date:	11/12/2021	Minor Street or Location:	north of R3
Data Collection Date:		Peak Hour:	PM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), V_p	2a	750-1000
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	89
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00021\ V_{maj\text{-}s}^2 - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]	3b	893
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	893
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	893
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]	4g	
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	Treatment Category (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED
D_p < 1.3 h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst: Jocelyn Lee	Major Street: Logue Avenue		
Analysis Date: 10/25/2021	Minor Street or Location: north of R3		
Data Collection Date:	Peak Hour: AM		
Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists			
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?			
Peak-hour pedestrian volume (ped/h), Vp		2a	861
If 2a ≥ 20 ped/h, then go to Step 3.			
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.			
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?			
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$		3a	123
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00021\ V_{maj\text{-}s}^2 - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]		3b	862
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.		3c	862
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.		3d	862
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.			
Step 4: Estimate pedestrian delay.			
Pedestrian crossing distance, curb to curb (ft), L		4a	50
Pedestrian walking speed (ft/s), S_p		4b	3.5
Pedestrian start-up time and end clearance time (s), t_s		4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]		4d	17
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$		4e	123
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]		4f	0.03
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]		4g	5.176373165
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.		4h	1.238015915
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.			
Expected motorist compliance at pedestrian crossings in region, Comp = high or low		5a	High
Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)		
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED		
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED		
D_p < 1.3 h (Comp = high or low)	CROSSWALK		

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst: Jocelyn Lee	Major Street: Logue Avenue		
Analysis Date: 11/12/2021	Minor Street or Location: north of R3		
Data Collection Date:	Peak Hour: PM		
Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists			
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?			
Peak-hour pedestrian volume (ped/h), V_p		2a	892
If 2a ≥ 20 ped/h, then go to Step 3.			
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.			
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?			
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$		3a	89
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00021\ V_{maj\text{-}s}^{2} - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]		3b	893
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.		3c	893
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.		3d	893
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.			
Step 4: Estimate pedestrian delay.			
Pedestrian crossing distance, curb to curb (ft), L		4a	50
Pedestrian walking speed (ft/s), S_p		4b	3.5
Pedestrian start-up time and end clearance time (s), t_s		4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]		4d	17
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$		4e	89
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]		4f	0.02
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]		4g	3.247379528
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.		4h	0.804628483
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.			
Expected motorist compliance at pedestrian crossings in region, Comp = high or low		5a	High
Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)		
D_p ≥ 21.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED		
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED		
D_p < 1.3 h (Comp = high or low)	CROSSWALK		

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS

Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Clyde Avenue
Analysis Date:	10/25/2021	Minor Street or Location:	south of P1
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	750-1000
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	765
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00021\ V_{maj\text{-}s}^{2} - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]	3b	387
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	387
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	387
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\,t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED
D_p < 1.3 h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS

Analyst and Site Information				
Analyst:	Jocelyn Lee	Major Street:	Clyde Avenue	
Analysis Date:	10/25/2021	Minor Street or Location:	south of P1	
Data Collection Date:		Peak Hour:	PM	

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), V_p	2a	750-1000
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	627
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC SC = $(0.00021\ V_{maj\text{-}s}^2 - 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR $[(0.00021\ \mathit{3a}\ 2 - 0.74072\ \mathit{3a} + 734.125)/0.75]$	3b	470
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	470
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	470
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	
Pedestrian walking speed (ft/s), S_p	4b	
Pedestrian start-up time and end clearance time (s), t_s	4c	
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\ t_c - 1) / v$ OR [$(e^{4f \times 4d} - 4f \times 4d - 1) / 4f$]	4g	
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	Treatment Category (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR $5.3 \text{ h} \leq D_p < 21.3$ h and Comp = low	RED
$1.3 \text{ h} \leq D_p < 5.3$ h (Comp = high or low) OR $5.3 \text{ h} \leq D_p < 21.3$ h and Comp = high	ACTIVE OR ENHANCED
$D_p < 1.3$ h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst: Jocelyn Lee	Major Street: Clyde Avenue		
Analysis Date: 10/25/2021	Minor Street or Location: south of P1		
Data Collection Date:	Peak Hour: AM		
Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists			
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?			
Peak-hour pedestrian volume (ped/h), Vp		2a	386
If 2a ≥ 20 ped/h, then go to Step 3.			
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.			
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?			
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$		3a	765
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00021\ V_{maj\text{-}s}^2 – 0.74072\ V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]		3b	387
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.		3c	387
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.		3d	387
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.			
Step 4: Estimate pedestrian delay.			
Pedestrian crossing distance, curb to curb (ft), L		4a	50
Pedestrian walking speed (ft/s), S_p		4b	3.5
Pedestrian start-up time and end clearance time (s), t_s		4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]		4d	17.28571429
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$		4e	765
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]		4f	0.2125
Average pedestrian delay (s/person), $d_p = (e^{vtc} – v\ t_c – 1) / v$ OR $[(e^{4f \times 4d} – 4f \times 4d – 1) / 4f]$		4g	163.317936
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.		4h	17.51131203
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.			
Expected motorist compliance at pedestrian crossings in region, Comp = high or low		5a	High
Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)		
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED		
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED		
D_p < 1.3 h (Comp = high or low)	CROSSWALK		

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Clyde Avenue
Analysis Date:	10/25/2021	Minor Street or Location:	south of P1
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), V_p	2a	469
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	627
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00021\,V_{maj\text{-}s}^2 - 0.74072\,V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]	3b	470
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	470
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	470
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	50
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	17.28571429
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	627
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	0.174166667
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\,t_c - 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]	4g	93.52469348
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	12.18418923
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED
D_p < 1.3 h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Clyde Avenue
Analysis Date:	10/25/2021	Minor Street or Location:	north of R5
Data Collection Date:		Peak Hour:	AM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street): a) Worksheet 1 – 35 mph (55 km/h) or less b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists		
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), Vp	2a	1-100
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	3a	807
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00021\, V_{maj\text{-}s}^2 - 0.74072\, V_{maj\text{-}s} + 734.125)/0.75$ OR [(0.00021 *3a* 2 – 0.74072 *3a* + 734.125)/0.75]	3b	364
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	364
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	364
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	50
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	17
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), $V_{maj\text{-}d}$	4e	807
Major road flow rate (veh/s), $v = V_{maj\text{-}d}/3600$ OR [4e/3600]	4f	0.22
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\, t_c - 1) / v$ OR [$(e^{4f \times 4d}$ – 4f x 4d – 1) / 4f]	4g	169.8090462
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	4.71691795
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = low	RED
1.3 h ≤ D_p < 5.3 h (Comp = high or low) OR 5.3 h ≤ D_p < 21.3 h and Comp = high	ACTIVE OR ENHANCED
D_p < 1.3 h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

WORKSHEET 1: PEAK-HOUR, 35 MPH (55 KM/H) OR LESS			
Analyst and Site Information			
Analyst:	Jocelyn Lee	Major Street:	Clyde Avenue
Analysis Date:	10/25/2021	Minor Street or Location:	north of R5
Data Collection Date:		Peak Hour:	PM

Step 1: Select worksheet (speed reflects posted or statutory speed limit or 85th percentile speed on the major street):
a) Worksheet 1 – 35 mph (55 km/h) or less
b) Worksheet 2 – exceeds 35 mph (55 km/h), communities with less than 10,000, or where major transit stop exists

Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a TCD type of treatment?		
Peak-hour pedestrian volume (ped/h), V_p	2a	1-100
If 2a ≥ 20 ped/h, then go to Step 3.		
If 2a < 20 ped/h, then consider median refuge islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian volume warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), V_{maj-s}	3a	659
Minimum signal warrant volume for peak hour (use 3a for Vmaj-s), SC $SC = (0.00021\ V_{maj-s}^2 - 0.74072\ V_{maj-s} + 734.125)/0.75$ OR $[(0.00021\ 3a\ 2 - 0.74072\ 3a\ + 734.125)/0.75]$	3b	450
If 3b < 133, then enter 133. If 3b ≥ 133, then enter 3b.	3c	450
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50 percent; otherwise enter 3c.	3d	450
If 2a ≥ 3d, then the warrant has been met and a traffic signal should be considered if not within 300 ft (91 m) of another traffic signal. Otherwise, the warrant has not been met. Go to Step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	4a	50
Pedestrian walking speed (ft/s), S_p	4b	3.5
Pedestrian start-up time and end clearance time (s), t_s	4c	3
Critical gap required for crossing pedestrian (s), $t_c = (L/Sp) + t_s$ OR [(4a/4b) + 4c)]	4d	17
Major road volume, total both approaches or approach being crossed if median refuge island is present during peak hour (veh/h), V_{maj-d}	4e	659
Major road flow rate (veh/s), $v = V_{maj-d}/3600$ OR [4e/3600]	4f	0.18
Average pedestrian delay (s/person), $d_p = (e^{vtc} - v\,t_c - 1) / v$ OR $[(e^{4f \times 4d} - 4f \times 4d - 1) / 4f]$	4g	95.93087312
Total pedestrian delay (h), $D_p = (d_p \times V_p)/3{,}600$ OR [(4g×2a)/3600] (this is estimated delay for all pedestrians crossing the major roadway without a crossing treatment – assumes 0% compliance). This calculated value can be replaced with the actual total pedestrian delay measured at the site.	4h	2.664746476
Step 5: Select treatment based upon total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region, Comp = high or low	5a	High

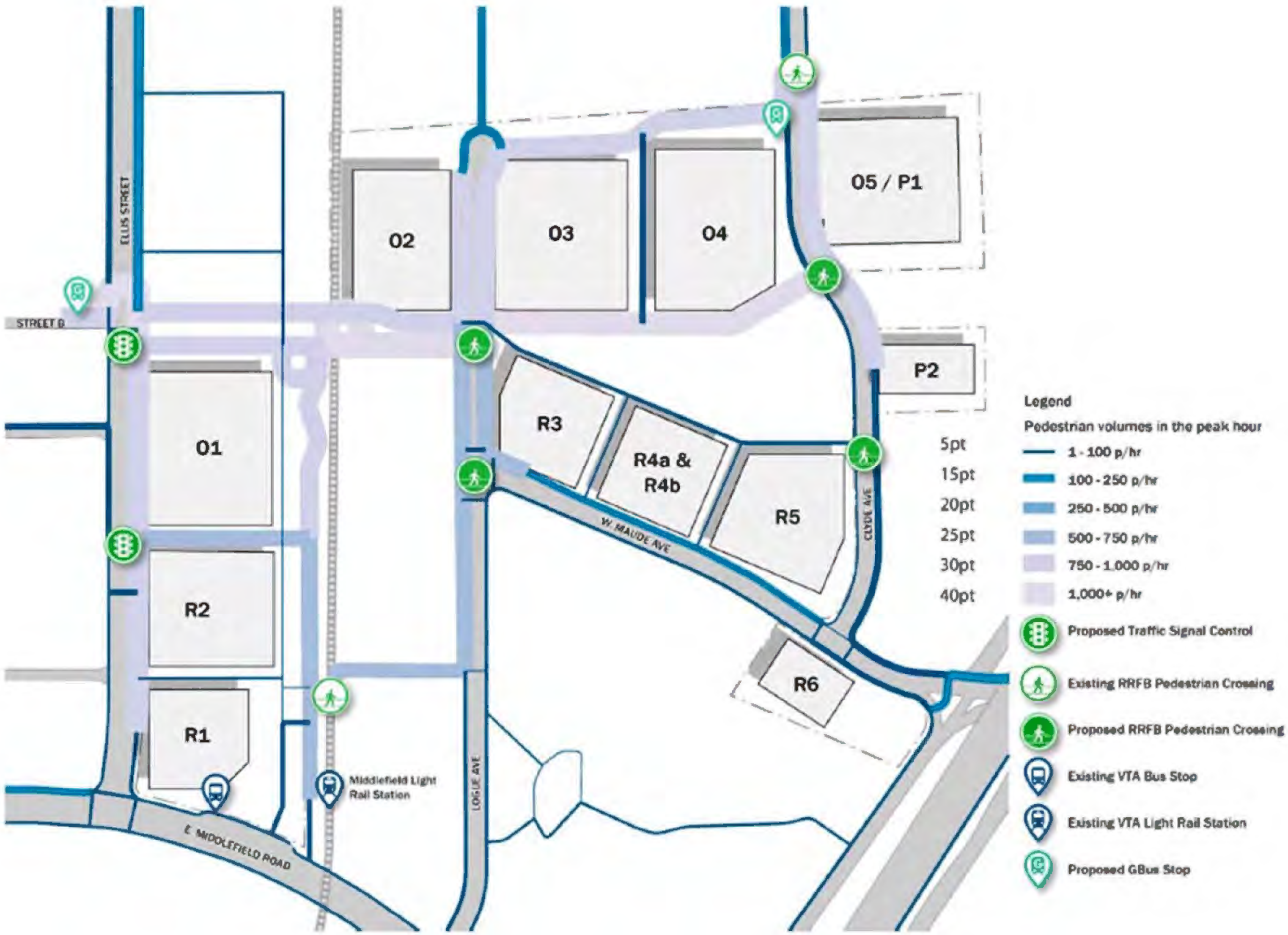
Total Pedestrian Delay, D_p (from 4h) and Motorist Compliance, Comp (from 5a)	**Treatment Category** (see Descriptions of Sample Treatments for examples)
$D_p \geq 21.3$ h (Comp = high or low) OR $5.3\ h \leq D_p < 21.3$ h and Comp = low	RED
$1.3\ h \leq D_p < 5.3$ h (Comp = high or low) OR $5.3\ h \leq D_p < 21.3$ h and Comp = high	ACTIVE OR ENHANCED
$D_p < 1.3$ h (Comp = high or low)	CROSSWALK

Figure A-2. Worksheet 1.

Appendix G

Pedestrian Flow Estimates

3 - 4 Hour AM Peak Period Pedestrian Flow Estimates for Office Use prepared by Google for the MPMP



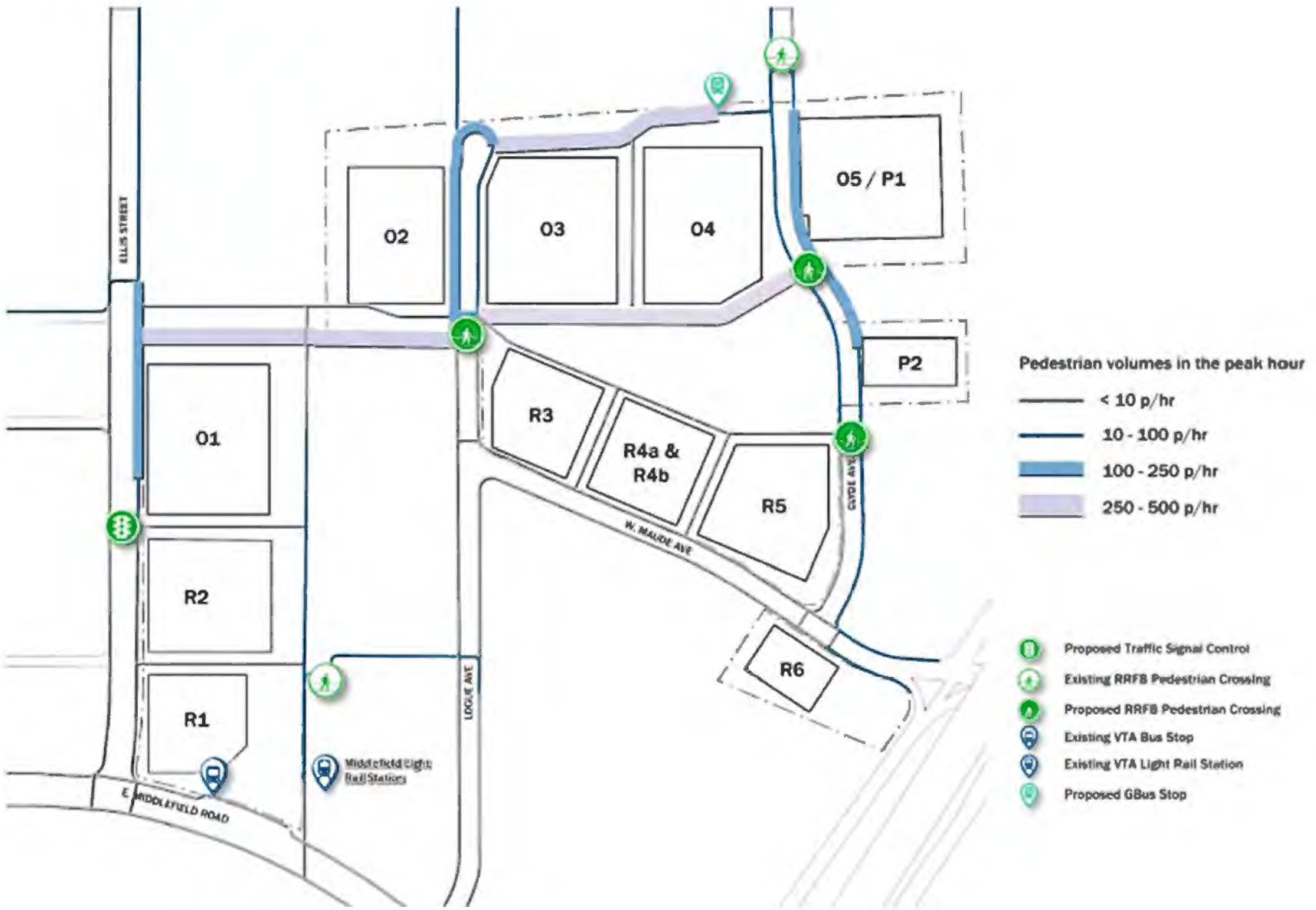
Crossing	Pedestrian Volume
Ellis and Middlefield	1-100
Middlefield at LRT Station	1-100
Ellis Midblock (Building R2)	1-100
Ellis at Street B	750-1000
Clyde at O5/P1	750-1000
Clyde Mid-Block	750-1000
Clyde at R5	1-100
Maude at Logue	1-100
Maude at Clyde	1-100
Maude at new Pedestrian Bridge	750-1000

Note:

The pedestrian volumes on this table have been estimated based on pre-pandemic Google mode splits for office use and existing + future office areas. Data is shown for the 3 – 4 hour AM peak period.

Only office trips are shown excluding background traffic linked to other sites and land uses. Existing count data is not available.

AM Peak-Hour Pedestrian Flow Estimates for Office Use prepared by Google for the MPMP



Crossing	Pedestrian Volume (AM peak hour)
Ellis and Middlefield	<10
Middlefield at LRT Station	<10
Ellis Midblock (Building R2)	10-100
Ellis at Street B	10-100
Clyde at O5/P1	10-100
Clyde Mid-Block	250-500
Clyde at R5	10-100
Maude at Logue	<10
Maude at Clyde	<10
Logue at new Pedestrian Bridge	100-250

Note:

The pedestrian volumes on this table have been estimated based on pre-pandemic Google mode splits for office use and existing + future office areas. Data is shown for the AM peak hour.

Only office trips are shown excluding background traffic linked to other sites and land uses. Existing count data is not available.

Appendix H

ARUP Loading Space Demand Analysis

Technical Note

ARUP

560 Mission Street
San Francisco, California 94105
United States
www.arup.com

t + 415 957 9445

Project title	East Whisman Logistics Masterplan	Job number	279655-00
cc	City of Mountain View Public Works	File reference	TN-02
Prepared by	Alexandra Cava Melody Ablola	Date	September 29, 2021
Subject	Delivery & Loading Requirements		

The following technical note has been prepared to provide details and justification regarding the overall delivery and loading requirements for the site, in comparison to the requirements set out by city municipal code. It should be noted that the loading recommendations made in this document are meant to serve deliveries only and are exclusive of any spaces required for the storage and collection of waste and waste equipment or the one moving truck space required per residential building.

1 Loading Spaces by Municipal Code & Precise Plan

The City of Mountain View Municipal Code Section 36.32.60. states the minimum number of loading spaces that shall be provided for each nonresidential use unless modified by the zoning administrator is as follows:

Table 1: Municipal Code Loading Spaces for Nonresidential Uses

Type of Land Use	Gross Floor Area	Loading Spaces Required
Commercial, industrial, institutional and service uses	10,000 to 30,000 square feet	1 space
	30,001 square feet and more	1 space per additional 20,000 square feet

The total projected floor area for all nonresidential uses of the East Whisman project is 1,362,000 square feet. Applying this square footage to the rate provided in the table above, a total of 69 loading spaces would be required. **Table 2** below provides a detailed breakdown of the commercial loading spaces required per building:

Table 2: East Whisman Loading Requirements by Code for Nonresidential Uses

Building	Commercial Area (Square Feet)	Loading Spaces Required
O1	Office – 441,939	22
O2	Office – 190,000	9
O3	Office – 310,000	15
O4	Office – 292,212	14
O5	Office – 82,849	4
R1	Retail – 18,308	1
R2	Retail – 4,200 Community – 8,434	1
R3	Retail – 2,877 Community – 1,666	1
R4	Retail – 1,955 Community – 1,666	1
R5	Retail – 2,660 Community – 3,234	1
R6	0	0
Total	**1,362,000**	**69**

For residential uses, the East Whisman Precise Plan states “one standard-size parking stall per 200 units shall be provided in convenient locations for pick-up/drop-off, short-term parking, loading and deliveries”. **Table 3** below specifies the expected number of units and the corresponding number of loading spaces required as designated by the Precise Plan as well as the combined nonresidential loading requirements from the table above:

Table 3: East Whisman Precise Plan Loading and Drop-off Requirements in Multifamily Residential Projects

Residential Building	Number of Units	Residential Loading Spaces Required	Commercial Loading Spaces Required	Total Loading Spaces per Building
R1	350	2	1	3
R2	400	2	1	3
R3	290	2	1	3
R4	315	2	1	3
R5	375	2	1	3
R6	170	1	0	1
Total	**1900**	**11**	**5**	**16**

2 Demand-based Loading Recommendations

As opposed to a loading space per square footage or per unit metric, a demand-based approach was applied that uses standard generation rates from local and global data surveys. While local observed rates were captured in 2015 in the Mountain View area for Google-occupied buildings, a more conservative rate of 1.6 deliveries per 10,000 sq. ft. is applied for this project in order to provide a reasonable level of futureproofing for non-Google office occupancy.

This volume of activity is independent of the anticipated tenant and is calculated based on the proposed use classification. This demand-based approach has been agreed upon by the City in lieu of the municipal code for other precedent projects, including Charleston East and Landings.

The demand-based vehicle generation forecast in **Table 4** below takes into account non-residential as well as residential deliveries:

Table 4: Demand-based Loading Recommendations by Program Type

Program Type	Area (Square Feet)	Deliveries per Day
Residential	1,726,000	130
Office	1,317,000	213

Retail	30,000	26
Community	15,000	1
Total	**3,088,000**	**370**

Deliveries per day and loading bay recommendations are broken down by building in the tables below. The peak bay recommendation assumes that 15% of all deliveries arrive in the peak hour and each vehicle has a 30-minute turnaround time.

Residential buildings include additional retail and community components as well. These program areas have therefore also been factored into the overall calculations shown in **Table 5** below.

Table 5: Residential, Retail, and Community Loading Recommendations

Residential Building	Residential Deliveries per Day	Commercial Deliveries per Day	Total Deliveries in the Peak Hour (15%)**	Total Bays Recommended at Peak*
R1	27	16	7	4
R2	28	5	5	3
R3	20	2	4	2
R4	20	2	4	2
R5	27	2	5	3
R6	8	0	2	1
Total	**130**	**27**	**27**	**15**

*It is assumed a single loading space can accommodate two deliveries in the peak hour, applying an average turnaround time of 30 minutes per vehicle.

**The Total Deliveries in the Peak Hour was calculated by taking the sum of the residential and commercial deliveries per day per building and multiplying it by 15%.

Table 6 below compares the recommended demand-based loading bay count versus the loading bay requirement by code for commercial (i.e., retail and community) and residential spaces, where "resi" is short for residential.

Table 6: Residential, Retail, and Community Demand-based Recommendations vs Code

Residential Building	Total Bays Recommended at Peak	Total Bays Recommended by Code	Delta
R1	4	3 (1 commercial, 2 resi)	+1
R2	3	3 (1 commercial, 2 resi)	0
R3	2	3 (1 commercial, 2 resi)	-1
R4	2	3 (1 commercial, 2 resi)	-1
R5	3	3 (1 commercial, 2 resi)	0
R6	1	1 (resi)	0
Total	**15**	**16**	**-1**

For the office delivery and loading summary provided in **Table 7**, it is assumed multiple tenants will occupy the various office buildings and therefore doesn't assume any consolidated deliveries. Thus, it is a conservative approach and will serve as the basis of design.

Table 7: Office Loading Recommendations

Office Building	Deliveries per Day	Total Deliveries in the Peak Hour (15%)	Total Bays Recommended at Peak*
O1	73	11	6
O2	30	5	3
O3	50	8	4
O4	47	8	4
O5	13	2	1
Total	**213**	**34**	**18**

*It is assumed a single loading space can accommodate two deliveries in the peak hour, applying an average turnaround time of 30 minutes per vehicle.

Table 8 below compares the recommended demand-based loading bay count versus the loading bay requirement by code for office spaces.

Table 8: Office Demand-based Recommendations vs Code

Office Building	Total Bays Recommended at Peak	Total Bays Recommended by Code	Delta
O1	6	22	-16
O2	3	9	-6
O3	4	15	-11
O4	4	14	-10
O5	1	4	-3
Total	**18**	**64**	**-46**

3 Loading Bay Dimensions & Sizing

A 30’ long box truck (SU-30) is proposed as the design vehicle for the site. Loading bays will be sized at 10’ W x 30’ L to accommodate this vehicle. The minimum required dimensions for a loading space set by the City of Mountain View: 10’ W x 25’ L with 12’ of vertical clearance.

An example loading dock layout at a typical building is shown in **Figure 1** below:

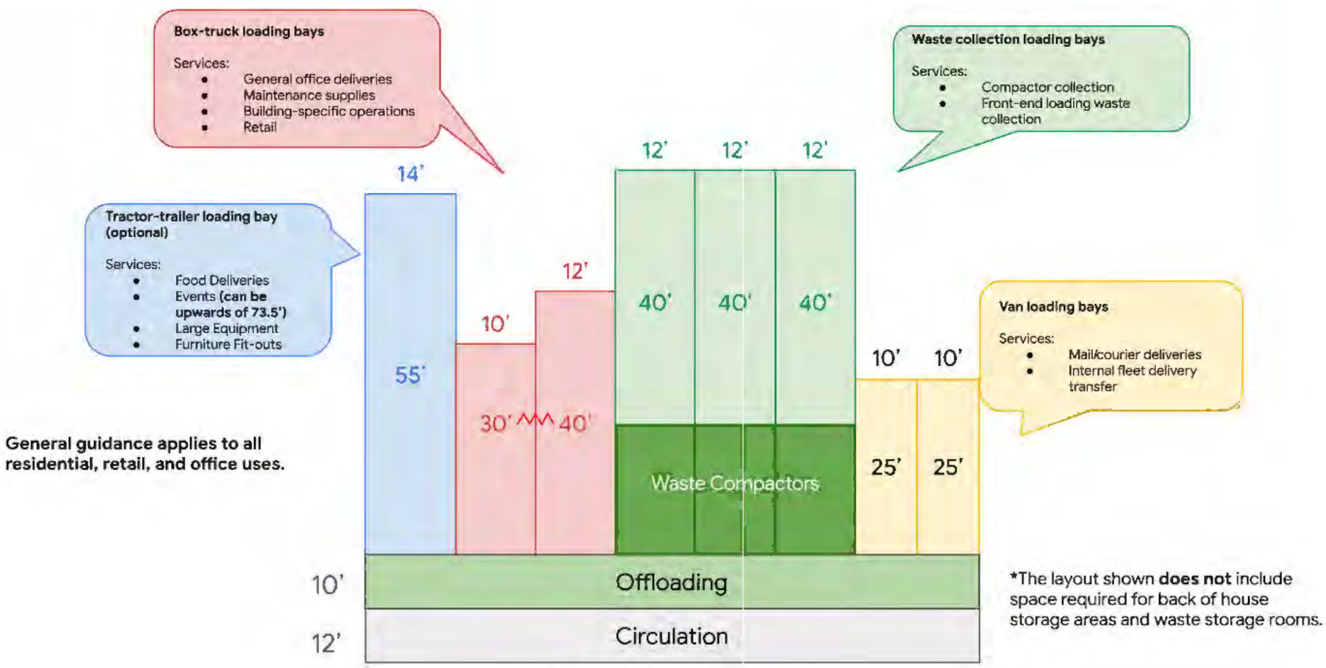


Figure 1: Example Loading Dock Layout

The table below outlines the various minimum height clearances required for the various delivery and service vehicles that will be accessing the site:

Table 9: Minimum Height Clearances by Vehicle Type

Vehicle Type	Length	Clear Height Requirement
Van	< 24’	12’
Box Truck	30’ – 40’	15’
Tractor-trailer (Articulated)	> 40’	15’
Waste Collection Truck	40’	15’ for traveling, 22’ for tipping

Appendix I

Local Parking Surveys for Offices and Apartments

Office Building Parking Counts

Building Address	City	TOD features	Parking Count Date[1]	Building Floor Area (s.f.)[2]	Peak Parking Demand	Parking Ratio (spaces/ksf)
TOD Buildings						
3050 S. Delaware St (Station 4)	San Mateo	Next to Hillsdale Caltrain Station	February 2018	216,428	456	2.11
Franklin Templeton Campus	San Mateo	0.6 mile to Hillsdale Caltrain Station and shuttles between station and campus	November 2016	380,843	862	2.26
200 & 250 S. Mathilda Ave (Nokia & Apple)[3]	Sunnyvale	1,800 feet to Sunnyvale Caltrain Station	February 2018	291,145	482	1.66
					Average	***2.03***

1. Parking survey for each site was conducted on regular weekdays between 10 AM and 2 PM, when office parking demand peaks.
2. Building floor area for buildings in Sunnyvale and Fremont and at 181 2nd Avenue in San Mateo was estimated based on Google Earth. Building area for Franklin Templeton was estimated based on 67% occupancy of total existing 568,423 s.f. The parking count was conducted for the Franklin Templeton Campus Expansion TIA, when the existing Franklin Templeton buildings were 67% occupied.
3. Only employee parking, excludes visitor parking.

Mountain View Apartment Parking Counts on Wednesday March 15, 2022

Building Names	Street Address	Mixed Use	Parking Spaces	Parking Residential	Shared Retail Parking	Occupied Spaces	Parking Unbundled	Parking Cost Monthly	Available Parking Per Unit	Available Parking Per Bdrm	Occupied Parking Per Unit	Occupied Parking Per Bdrm	Units	Bedrooms
Park Place	851 Church St	Yes	561	493	68	343	unknown	unknown	1.50	0.98	0.92	0.60	373	571
The Dean	458 San Antonio Rd	Yes	837	668	169	507	1st space included with rent	$100	1.44	1.01	0.87	0.61	583	830
Madrone	111 Rengstorff Ave	No	415	415		284	1st space included with rent	unknown	1.53	1.04	1.04	0.71	272	398
Elan	801 W El Camino Real	Yes	303	248	55	187	1st space included with rent	$75	1.85	1.46	1.14	0.90	164	208
Eaves	555 W Middlefield Rd	No	670	670		385	Bundled		1.67	1.39	0.96	0.80	402	483
											Average Parking Demand Rate			
											0.99	**0.72**		

GreenTRIP Parking Database - Site Seleced for Unbundled Parking Analysis

Building ID	Building Names	City	Mixed Use	Parking Spaces	Occupied Spaces	Is Parking Unbundled	Parking Unbundled	Parking Cost Monthly	Available Parking Per Unit	Available Parking Per Bdrm	Occupied Parking Per Unit	Occupied Parking Per Bdrm	Units	Total Bdrms
304	Fourth & U	Berkeley	Yes	205	117	Yes	180	50	1.20	1.00	0.68	0.57	171	206
305	Park Place	Mountain View	Yes	501	349	Yes	373	75	1.34	0.88	0.94	0.61	373	571
303	Via	Sunnyvale	Yes	457	348	Yes	457	25	1.61	1.14	1.23	0.87	284	400
235	Madera Apartments	Mountain View	No	279	179	Yes	48	100	1.37	0.96	0.88	0.62	203	290
238	Waterford Place	San Jose	No	381	292	Yes	118	25	1.60	1.04	1.23	0.79	238	368
242	Esplanade Apartments	San Jose	Yes	412	331	Yes	2	45	1.48	0.97	1.19	0.78	278	425
302	Connolly Station	Dublin	No	434	378	Yes	62	50	1.40	1.00	1.22	0.87	309	436
307	Avalon at Cahill Park	San Jose	Yes	283	231	Yes	31	110	1.30	0.87	1.06	0.71	218	324
245	Verandas Apartments	Union City	No	422	280	No			1.50	1.28	0.99	0.85	282	330
301	Lawrence Station	Sunnyvale	Yes	668	485	No			1.99	1.46	1.44	1.06	336	457
309	Plant 51	San Jose	No	470	365	No			1.77	1.06	1.38	0.82	265	444
310	Hidden Willows Apts	San Jose	No	161	137	No			1.44	1.10	1.22	0.94	112	146
311	Alterra	San Jose	No	239	209	No			1.67	0.84	1.46	0.73	143	286
314	Pacific Park Plaza	Emeryville	Yes	907	701	No			1.55	1.17	1.20	0.91	586	773

	Average Parking Demand Rate	
Average of 100% unbundled	**0.95**	**0.68**
All Average	**1.15**	**0.80**

Site Selected Criteria

Residential Occupancy Rate >= 95%
Available Parking Per Bdrm >=0.57
Resident Type: No Senior, diverse abilities
Pct Affordable <= 15%
Units >= 100

T-16. Unbundle Residential Parking Costs from Property Cost

GHG Mitigation Potential

15.7%

Up to 15.7% of GHG emissions from project VMT in the study area

Co-Benefits (icon key on pg. 34)

Climate Resilience

Unbundling residential parking costs from property costs could incentivize increased use of public transit and thus result in less traffic, potentially reducing congestion or delays on major roads during peak AM and PM traffic periods. When this reduction occurs during extreme weather events, it better allows emergency responders to access a hazard site.

Health and Equity Considerations

The unbundling of parking costs would help decrease housing costs for individuals who do not own personal vehicles.

Measure Description

This measure will unbundle, or separate, a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost. On the assumption that parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces, this measure results in decreased vehicle ownership and, therefore, a reduction in VMT and GHG emissions. Unbundling may not be available to all residential developments, depending on funding sources.

Subsector

Parking or Road Pricing/Management

Locational Context

Urban, suburban

Scale of Application

Project/Site

Implementation Requirements

Parking costs must be passed through to the vehicle owners/drivers utilizing the parking spaces for this measure to result in decreased vehicle ownership.

Cost Considerations

Unbundling residential parking costs from property costs may decrease revenue for property owners. This loss may be partially offset by reduced costs needed to maintain parking facilities with less car occupancy and the potential for non-resident parking as a supplementary income stream. For residents, reduced fees and the ability to go without owning a car is a major cost benefit. Municipalities also benefit from a reduction of cars on the road, which can lead to lower infrastructure and roadway maintenance costs.

Expanded Mitigation Options

Pair with Measure T-19-A or T-19-B to ensure that residents who eliminate their vehicle and shift to a bicycle can safely access the area's bikeway network.

GHG Reduction Formula

$$A = \frac{B}{C} \times D \times E$$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project VMT in study area	0–15.7	%	calculated
User Inputs				
B	Annual parking cost per space	[ ]	$ per year	user input
Constants, Assumptions, and Available Defaults				
C	Average annual vehicle cost	$9,282	$ per year	AAA 2019
D	Elasticity of vehicle ownership with respect to total vehicle cost	-0.4	unitless	Litman 2020
E	Adjustment factor from vehicle ownership to VMT	1.01	unitless	FHWA 2017

Further explanation of key variables:

- (B) – For most projects, this represents a monthly parking fee multiplied by 12. For deeded parking spaces, an estimate of the additional cost to a mortgage may be used, or the total cost may be prorated over 30 years. Costs to park will vary widely based on location; however, this value should consider if other nearby offsite parking options are available at lower cost. See Table T-16.1 in Appendix C for examples of monthly parking prices for different facility types.
- (C) – The average vehicle cost per year in 2019 was $9,282, based on a car driven 15,000 miles per year. Costs include gasoline, maintenance, insurance, license and registration, loan finance charges, and depreciation but do not include parking (AAA 2019).
- (D) – A synthesis of literature reported that, on the low end, a 0.4 percent decrease in vehicle ownership occurs for every 1 percent increase in total vehicle costs (Litman 2020).
- (E) – The adjustment factor from vehicle ownership to VMT is based on the following (FHWA 2017):
  - The average Californian household with 1 vehicle drives 11,117 miles per vehicle while households with 2 vehicles drives 11,223 miles per vehicle.
  - The reduction of 1 vehicle from a 2-vehicle household leads to a 0.94 percent decrease in VMT per vehicle.
  - So, $E = 1 - \left(\frac{11{,}117 \frac{\text{miles}}{\text{vehicle}} - 11{,}223 \frac{\text{miles}}{\text{vehicle}}}{11{,}223 \frac{\text{miles}}{\text{vehicle}}} \right) = 1.01$

GHG Calculation Caps or Maximums

Measure Maximum

(A_{max}) The GHG reduction from unbundled parking is capped at 15.7 percent, which is based on the use of (B_{max}) in the GHG reduction formula.

(B_{max}) The annual cost of parking space is capped at $3,600, or $300 per month. At monthly costs above $300, the cost of parking represents more than a 30 percent increase in total vehicle cost. In addition, this reflects the upper maximum of observed parking prices outside of extremely dense downtown areas (such as San Francisco's SOMA neighborhood).

Subsector Maximum

($\sum A_{max_{T\text{-}14 \text{ through } T\text{-}16}} \leq 35\%$) This measure is in the Parking or Road Pricing/Management subsector. This subcategory includes Measures T-14 through T-16. The VMT reduction from the combined implementation of all measures within this subsector is capped at 35 percent.

Example GHG Reduction Quantification

The user reduces VMT by unbundling the parking costs from property costs of a project, discouraging vehicle ownership, and therefore reducing VMT. In this example, the annual parking cost per space is $1,800 (B), which would reduce GHG emissions from project study area VMT (as compared to the same project with bundled parking costs) by 7.8 percent.

$$A = \left(\frac{\$1,800}{\$9,282}\right) \times -0.4 \times 1.01 = -7.8\%$$

Quantified Co-Benefits

Improved Local Air Quality

The percent reduction in GHG emissions (A) would be the same as the percent reduction in NO_X, CO, NO_2, SO_2, and PM. Reductions in ROG emissions can be calculated by multiplying the percent reduction in GHG emissions (A) by an adjustment factor of 87 percent. See *Adjusting VMT Reductions to Emission Reductions* above for further discussion.

Energy and Fuel Savings

The percent reduction in vehicle fuel consumption would be the same as the percent reduction in GHG emissions (A).

VMT Reductions

The percent reduction in VMT would be the same as the percent reduction in GHG emissions (A).

Sources

- AAA. 2019. *Your Driving Costs*. September. Available: https://exchange.aaa.com/wp-content/uploads/2019/09/AAA-Your-Driving-Costs-2019.pdf. Accessed: January 2021.
- Federal Highway Administration (FHWA). 2017. *National Household Travel Survey – 2017 Table Designer*. Annual VMT / Vehicle by Count of Household Vehicles in California. Available: https://nhts.ornl.gov/. Accessed: March 2021.
- Litman, T. 2020. *Parking Requirement Impacts on Housing Affordability*. June. Available: https://www.vtpi.org/park-hou.pdf. Accessed: January 2021.

Shared Parking Analysis with Unbundled Parking Rate

	Building R1		
Hour of Day	**Retail**	**Residential**	**Total Demand**
Parking Demand by Hour:			
6 a.m.	2	323	325
7 a.m.	5	289	294
8 a.m.	12	255	267
9 a.m.	26	221	247
10 a.m.	45	204	249
11 a.m.	56	187	243
Noon	71	170	241
1 p.m.	71	170	241
2 p.m.	68	170	238
3 p.m.	62	187	249
4 p.m.	62	204	266
5 p.m.	62	221	283
6 p.m.	65	238	303
7 p.m.	60	255	315
8 p.m.	50	272	322
9 p.m.	34	289	323
10 p.m.	14	323	337
11 p.m.	6	330	336
Midnight	0	340	340
	Parking Demand by Land Use[1]		**Max. Demand**
	71	**340**	**340**
Total R1 Proposed Spaces		354	

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking

Notes:

1. Parking demand for the residential use is based on the recommended parking rate with 100% unbundled parking. Parking demand for retail is based on the ITE Parking Generation Manual, 5th Edition.

Shared Parking Analysis with Unbundled Parking Rate

	Building R2		
Hour of Day	**Retail**	**Residential**	**Total Demand**
Parking Demand by Hour:			
6 a.m.	**1**	**364**	**365**
7 a.m.	3	326	329
8 a.m.	8	287	295
9 a.m.	17	249	266
10 a.m.	29	230	259
11 a.m.	36	211	247
Noon	46	192	238
1 p.m.	46	192	238
2 p.m.	44	192	236
3 p.m.	40	211	251
4 p.m.	40	230	270
5 p.m.	40	249	289
6 p.m.	42	268	310
7 p.m.	39	287	326
8 p.m.	**32**	**306**	**338**
9 p.m.	**22**	**326**	**348**
10 p.m.	**9**	**364**	**373**
11 p.m.	**4**	**372**	**376**
Midnight	**0**	**383**	**383**
	Parking Demand by Land Use[1]		**Max. Demand**
	46	**383**	**383**
Total R2 Proposed Spaces		337	

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking

Notes:

1. Parking demand for the residential use is based on the recommended parking rate with 100% unbundled parking. Parking demand for retail is based on the ITE Parking Generation Manual, 5th Edition.

Shared Parking Analysis with Unbundled Parking Rate

	Building R3		
Hour of Day	**Retail**	**Residential**	**Total Demand**
Parking Demand by Hour:			
6 a.m.	1	219	220
7 a.m.	1	196	197
8 a.m.	3	173	176
9 a.m.	6	150	156
10 a.m.	11	138	149
11 a.m.	13	127	140
Noon	17	115	132
1 p.m.	17	115	132
2 p.m.	16	115	131
3 p.m.	15	127	142
4 p.m.	15	138	153
5 p.m.	15	150	165
6 p.m.	16	161	177
7 p.m.	14	173	187
8 p.m.	12	184	196
9 p.m.	8	196	204
10 p.m.	3	219	222
11 p.m.	1	223	224
Midnight	0	230	230
	Parking Demand by Land Use[1]		**Max. Demand**
	17	**230**	**230**
Total R3 Proposed Spaces		**244**	

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking

Notes:

1. Parking demand for the residential use is based on the recommended parking rate with 100% unbundled parking. Parking demand for retail is based on the ITE Parking Generation Manual, 5th Edition.

Shared Parking Analysis with Unbundled Parking Rate

	Building R4		
Hour of Day	**Retail**	**Residential**	**Total Demand**
Parking Demand by Hour:			
6 a.m.	0	73	73
7 a.m.	1	65	66
8 a.m.	2	58	60
9 a.m.	5	50	55
10 a.m.	8	46	54
11 a.m.	10	42	52
Noon	13	39	52
1 p.m.	13	39	52
2 p.m.	12	39	51
3 p.m.	11	42	53
4 p.m.	11	46	57
5 p.m.	11	50	61
6 p.m.	12	54	66
7 p.m.	11	58	69
8 p.m.	9	62	71
9 p.m.	6	65	71
10 p.m.	3	73	76
11 p.m.	1	75	76
Midnight	0	77	77
	Parking Demand by Land Use[1]		**Max. Demand**
	13	**77**	**77**
Total R4 Proposed Spaces		**92**	

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking

Notes:

1. Parking demand for the residential use is based on the recommended parking rate with 100% unbundled parking. Parking demand for retail is based on the ITE Parking Generation Manual, 5th Edition.

Shared Parking Analysis with Unbundled Parking Rate

	Building R5		
Hour of Day	**Retail**	**Residential**	**Total Demand**
Parking Demand by Hour:			
6 a.m.	1	251	252
7 a.m.	2	224	226
8 a.m.	4	198	202
9 a.m.	8	172	180
10 a.m.	14	158	172
11 a.m.	17	145	162
Noon	22	132	154
1 p.m.	22	132	154
2 p.m.	21	132	153
3 p.m.	19	145	164
4 p.m.	19	158	177
5 p.m.	19	172	191
6 p.m.	20	185	205
7 p.m.	18	198	216
8 p.m.	15	211	226
9 p.m.	11	224	235
10 p.m.	4	251	255
11 p.m.	2	256	258
Midnight	0	264	264
	Parking Demand by Land Use[1]		**Max. Demand**
	22	**264**	**264**
Total R1 Proposed Spaces		311	

Time of Day Source: Urban Land Institute (ULI) *Shared Parking, 3rd Edition, 2005*.
Bold indicate parking demand greater than proposed parking

Notes:

1. Parking demand for the residential use is based on the recommended parking rate with 100% unbundled parking. Parking demand for retail is based on the ITE Parking Generation Manual, 5th Edition.

Appendix J

Transportation Demand Management (TDM) Plan

Middlefield Park Transportation Demand Management (TDM) Plan

Prepared for:
Google/Lendlease

November 2020

SJ19-1911

FEHR PEERS

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of the Middlefield Park Transportation Demand Management (TDM) Plan is to reduce the amount of vehicle traffic generated by the mixed-use development by creating measures, strategies, incentives, and policies to influence travel behavior and mode choice of employees and residents from driving alone (single-occupancy vehicles – SOVs) to using other travel modes including shuttles, transit, carpooling, cycling, and walking. Section 3.9 of the East Whisman Precise Plan (EWPP) outlines specific TDM requirements of residential and non-residential developments designed to reduce vehicle trips into and out of the East Whisman planning area.

Projects within the EWPP planning area are required to prepare TDM Plans that meet project-specific trip reduction goals or peak-hour trip caps. The EWPP identifies some TDM requirements related to physical design features, basic operational measures, and alternative operational measures, which must be included in the TDM plans. Beyond these specific requirements each project can define the TDM programs they will use to meet their trip reduction goals or caps.

While the Final EWPP identifies a long-term trip cap in the form of AM and PM peak hour trip rates for office development, we understand these office trip caps have not formally been adopted and may be subject to change as each development proposal comes forward. In addition, there are no adopted trip reduction standards for residential projects. Therefore, the Office[1] and Residential[2] TDM Plans presented here include a robust set of TDM strategies that will be used to meet the EWPP TDM requirements.

Two existing City of Mountain View guidelines were considered in the development of the Middlefield Park TDM Plan. These include the North Bayshore Office and Residential TDM Guidelines. While there are significant differences in the monitoring requirements between North Bayshore and East Whisman, the TDM program included in these guidelines are directly applicable to Middlefield Park.

Beyond simply meeting the TDM requirements for Middlefield Park, Google will continue to offer programs designed to improve circulation, minimize traffic impacts, and promote multimodal accessibility for their workers, residents, and the larger community. Looking forward, Google will continue to be a leader in regional transportation solutions, including both financial contributions and development of programs and services that improve transportation alternatives for workers and the community at large.

[1] North Bayshore Transportation Demand Management Plan Guidelines, February 2015.
[2] North Bayshore Residential Transportation Demand Management Plan Guidelines, May 2018.

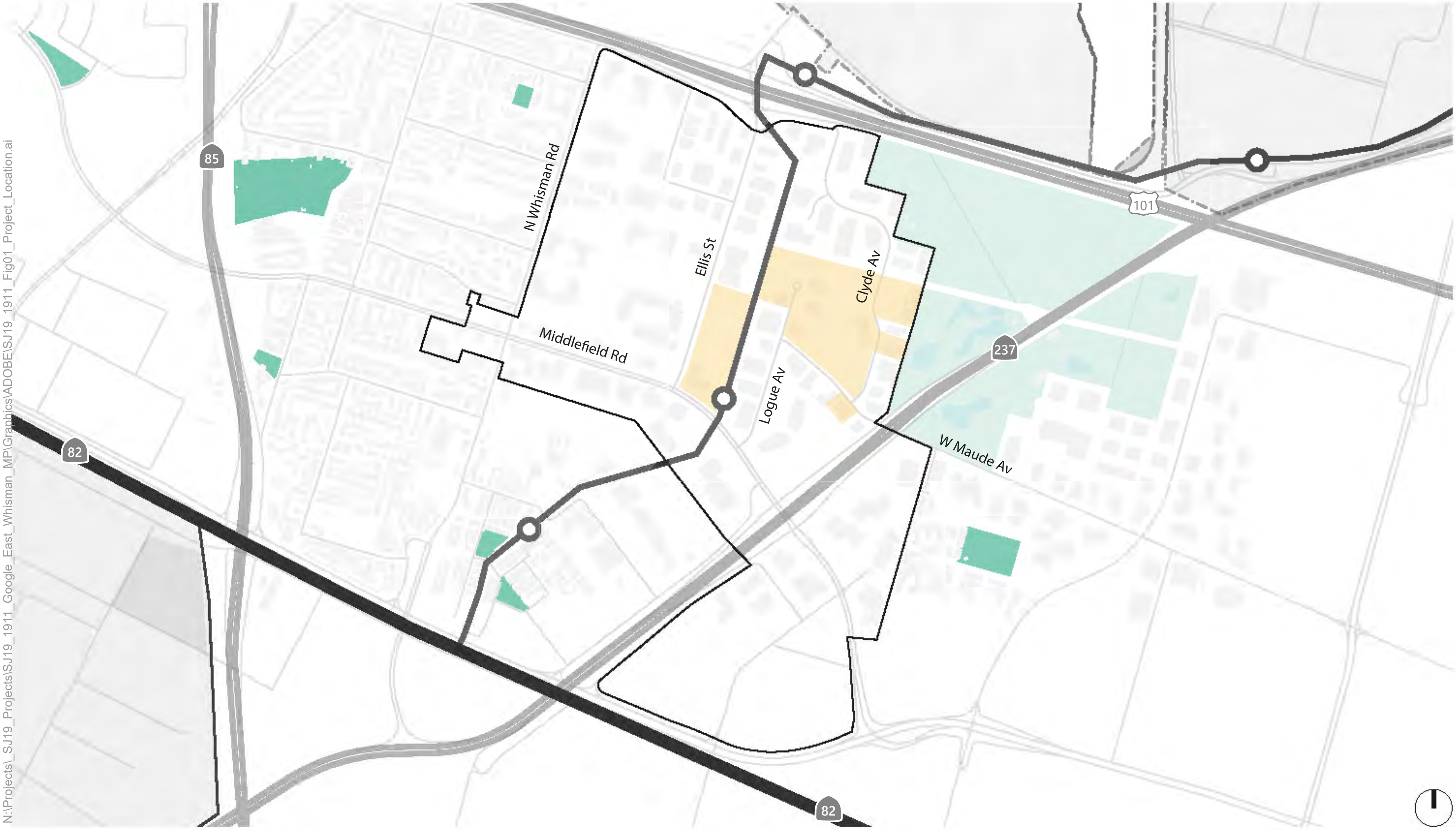
Middlefield Park Description

Middlefield Park is a transit-oriented, mixed-use community complete with stores, services, and restaurants for residents, neighbors, and workers, and a range of plazas and open spaces. Middlefield Park is located near the center of the EWPP area with frontage on Ellis Street, Middlefield Road, Logue Avenue, Maude Avenue, Clyde Avenue, and the Hetch-Hetchy Trail Park. The southern portion of Middlefield Park is immediately west of and adjacent to the Middlefield light-rail transit (LRT) station operated by the Santa Clara Valley Transportation Authority (VTA). The project location is shown on **Figure 1**.

The office component of Middlefield Park includes a total of 1,338,000 square feet of office space in five buildings. Parking is provided under the buildings and in two parking structures located on Clyde Avenue. The residential portion of the project includes a total of 1,850 dwelling units located in seven buildings. The residential parking is provided under each building. There is also 30,000 square feet of community supporting retail space located on the ground floor of residential buildings.

From accessible bike paths to effective transit options, Middlefield Park includes infrastructure improvements aimed at shifting mode share away from single occupancy vehicles (SOVs). The physical design features, the site's proximity to high quality public transit (such as VTA Middlefield Station and downtown Mountain View Caltrain station), access to multiple other transportation options including active mobility services, ride-sharing and car-sharing programs, and the extension of Google's shuttle will have a combined effect of reducing vehicular mode share to meet the EWPP trip reduction requirements.

N:\Projects_SJ19_Projects\SJ19_1911_Google_East_Whisman_MP\Graphics\ADOBE\SJ19_1911_Fig01_Project_Location.ai



Project Site

East Whisman Precise Plan Boundary

Figure 1

Proejct Location

Figure 2

Site Plan

EWPP Plan TDM Standards

The EWPP includes a set of ten guiding principles linked to the Plan's standards and regulations. The Middlefield Park TDM Plan addresses the guiding principle to Minimize Vehicle Trips that establishes clear expectations around TDM, parking supply, and other actions that support alternative travel modes. The Minimize Vehicle Trips principle is focused on actions that limit vehicular trips and vehicle miles traveled (VMT) to, from, and within the planning area.

As stated previously, Section 3.9 of the EWPP outlines the specific TDM requirements designed to reduce vehicle trips into and out of the East Whisman planning area. Both residential and non-residential projects are required to prepare TDM Plans that meet project-specific trip reduction goals or peak-hour trip caps. The EWPP requires three types of TDM plan elements for both residential and non-residential land uses. These required elements include physical site requirements, basic operational requirements, and alternative operational requirements. Beyond these specific requirements each project can define TDM programs they will use to meet their trip reduction goals or trip caps. The effectiveness of each project's TDM plan will be monitored on an annual basis.

The specific guidance on annual monitoring methodologies has not been adopted by the City of Mountain View; however, for office developments, the plan specifically identifies conducting an employee survey and collecting driveway counts. For office developments, the City can impose penalties for non-compliance and if non-compliance continues, the City can then require implementation of alternative TDM measures. Some of the alternative measures identified by the City include implementation of parking fees, increased transit subsidies, or the imposition of more aggressive TDM policies.

For a residential TDM Plan, the EWPP does not include a specific numeric trip reduction goal, but it does reference that the trip-reduction should be consistent with the Greenhouse Gas Reduction Program or other City trip-reduction standard. Currently, the Greenhouse Gas Reduction Program recommends a trip reduction of 9% over Institute of Transportation Engineers (ITE) trip rates as an employment trip reduction standard for the EWPP area. Therefore, the Middlefield Park Residential TDM Plan uses this same standard for residential uses until an EWPP standard is adopted.

The EWPP specifies that the annual monitoring for residential uses shall include parking occupancy counts to determine the peak parking demand and resulting parking demand rate. In addition to the parking counts, the annual monitoring report must include a description of the TDM measures and any modifications that have been made to the measures. While the City is not proposing to impose penalties on residential uses, if the development does not meet its trip-reduction goal, the property manager or homeowner's association will need to revise the TDM plan with new measures or policies to meet the trip-reduction goal.

One significant difference in how TDM is being implemented and monitored in the EWPP compared to North Bayshore is that individual projects are not directly linked to the monitoring of the gateway intersection. Instead, the City proposes to use a robust monitoring program to measure how the overall Plan is performing to reduce vehicle trips. The City will consider site-specific data collected by each project along with data on gateway intersection congestion, vehicle miles traveled, and other data sources. These area-wide performance measures will be monitored by the City and Mountain View Transportation Management Association (MVTMA). The monitoring data will be used to inform on-going City decisions regarding capital improvements, Plan area TDM requirements, and density of development.

Office Trip Cap Calculation

To minimize the number of vehicle trips into and out of East Whisman, the Plan contains a long-term trip reduction requirement for new non-residential projects including office, research and development (R&D), and industrial projects. The City's long-term trip rate for non-residential projects is 0.95 peak-hour trips per 1,000 square feet (ksf) for the AM peak hour and 0.88 peak-hour trips per ksf for the PM peak hour.[3]

The EWPP notes that the office peak-hour trip rates may be increased in the future if capacity-increasing improvements are made at planning area gateways. At that time, an area-wide average increase would be implemented for site-specific trip caps through criteria established by the Office Trip Cap Phasing Program and Administrative Guidelines. These guidelines were not yet adopted when this document was prepared.

Table 1 shows near-term AM and PM peak hour trips caps for the office development. The AM Peak Hour trip cap for the project is 1,272 trips. The PM peak hour trip cap for the project is 1,178 trips. These two-way trip caps (inbound and outbound vehicles) would be measured at the driveways serving the office development. Since parking for the Ellis and Maude components would be managed as a single parking district, the total trips accessing both components would be evaluated together.

Table 1: Middlefield Park Office Trip Cap Calculations

Office	Size (sf)	AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Trips
Ellis Development	457,380	0.95	435	0.88	403
Maude Development	880,620	0.95	837	0.88	775
Total	*1,338,000*	*0.95*	*1,272*	*0.88*	*1,178*

Source: Fehr & Peers, 2020

[3] The long-term trip rates for office development was used when developing the TDM plan and may be subject to change when a final trip rate is adopted by the City.

Residential Trip Reduction Standards

The EWPP states that all residential projects will have a TDM plan that can achieve a trip reduction consistent with the Greenhouse Gas Reduction Program or other City trip-reduction standard. These trip reduction standards were not yet adopted when this document was prepared. For the purposes of this TDM plan, it was assumed the Greenhouse Gas Reduction goal for the residential TDM will be similar to the reduction goal for employment trips in the EWPP area which is 9% over Institute of Transportation Engineers trip generation rates. In addition, a parking management plan is required for any parking reduction below the City's minimum residential requirements for the EWPP area.

2. Area Transportation System

The transportation system serving the site includes roadway facilities, pedestrian and bicycle facilities, and public transit service. Provided below is a description of transportation options other than SOVs available to people traveling to/from Middlefield Park including public transit, and bicycle and pedestrian facilities including planned improvements.

Transit Service

Bus and light rail service in Mountain View are operated by the VTA. Commuter rail service (Caltrain) is operated from San Francisco to Gilroy by the Peninsula Corridor Joint Powers Board. The Mountain View Community Shuttle is operated jointly by the City of Mountain View and Google. **Table 2** summarizes the existing transit services for Middlefield Park area including average weekday peak load factors for VTA buses, LRT, and Caltrain. The bus routes, bus stops, LRT line, LRT station, and Caltrain station are illustrated on **Figure 2**.

Santa Clara Valley Transportation Authority (VTA)

VTA Light Rail Service (LRT)

The Mountain View-Alum Rock (Orange) line extends from the downtown Mountain View Transit Center to Alum Rock light rail station in East San José. The Middlefield Station is in the center of the Middlefield Park project with the Bayshore/NASA station to the north and Whisman Station to the south. The Orange line provides connections to BART in Milpitas, and Caltrain in downtown Mountain View with 15-minute headways on weekdays.

VTA Bus Service

Middlefield Park is served by two VTA bus routes as shown in **Table 2** and on **Figure 3**. Route 21 operates on Middlefield Road with two bus stops servicing Middlefield Park – one on Middlefield Road near the LRT station and the other on Ellis Street. The headways (time between successive buses) are 30 minutes during weekdays and hourly on Saturdays. Route 21 does not operate on Sundays. Route 185 provides weekday hourly express bus service from Gilroy/Morgan Hill during three hours in the AM and PM peak periods. The service operates on Middlefield Road with a stop at Middlefield and Ellis.

Table 2: Existing Transit Services

Route[1]	From	To	Weekdays		Weekends	
			Operating Hours	Peak Headway[2] (minutes)	Operating Hours	Headway[2] (minutes)
VTA Bus Service						
21	Stanford Shopping Center	Santa Clara Transit Center	5:45 AM – 8:00 PM	30	8:45 AM - 6:00 PM Sat. (N/A Sun.)	60 Sat. (N/A Sun.)
185	Gilroy / Morgan Hill	Mountain View	7:30 AM – 9:30 AM 4:00 PM- 6:15 PM	60	N/A	N/A
VTA Light Rail Service						
Orange Line Eastbound	Alum Rock	Mountain View	5:00 AM- 12:45 AM	15	6:00 AM- 12:45 AM	30
Orange Line Westbound	Mountain View	Alum Rock	4:45 AM- 12:00 AM	15	6:15 AM – 12:00 AM	30
Mountain View Community Shuttle						
Mountain View Community Shuttle	Loops throughout the City of Mountain View Stop Middlefield / Whisman		10:00 AM – 6:00 PM	30	10:00 AM – 6:00 PM	60
MVgo	Mountain View Transit Center	Middlefield LRT Station	7:15 AM – 10:35 AM and 3:45 PM – 7:40 PM	15	N/A	N/A
Caltrain Commuter Rail						
Caltrain	San Francisco	Gilroy	4:30 AM- 1:30 AM	20-40	7:30 AM - 1:40 AM	60

Caltrain

Caltrain provides inter- and intra-county commuter rail service from San Francisco County to the north, through San Mateo County, to Santa Clara County in the south. The Peninsula Corridor Joint Powers Board operates Caltrain 365 days a year, with reduced schedules on weekends and major U.S. holidays. Weekday trains are a mix of Baby Bullet, Limited, and Local trains. Caltrain currently operates 46 northbound and 46 southbound (total of 92) trains per day between San José and San Francisco during the week. The Mountain View Caltrain Station is located in downtown Mountain View, approximately one mile to the west of the Plan area. Light rail and MVgo shuttle routes provide a direct connection between the Caltrain Station and Middlefield Park.

The Mountain View Station is the third busiest station in the Caltrain system, with approximately 4,560 boardings per weekday (Caltrain, 2019).

The *Caltrain Modernization Program* will electrify the Caltrain system and, in turn, improve the performance, operating efficiency, capacity, safety, and reliability of Caltrain's rail service. Electrification will help meet increasing ridership demand and is scheduled to be completed by May 2022.

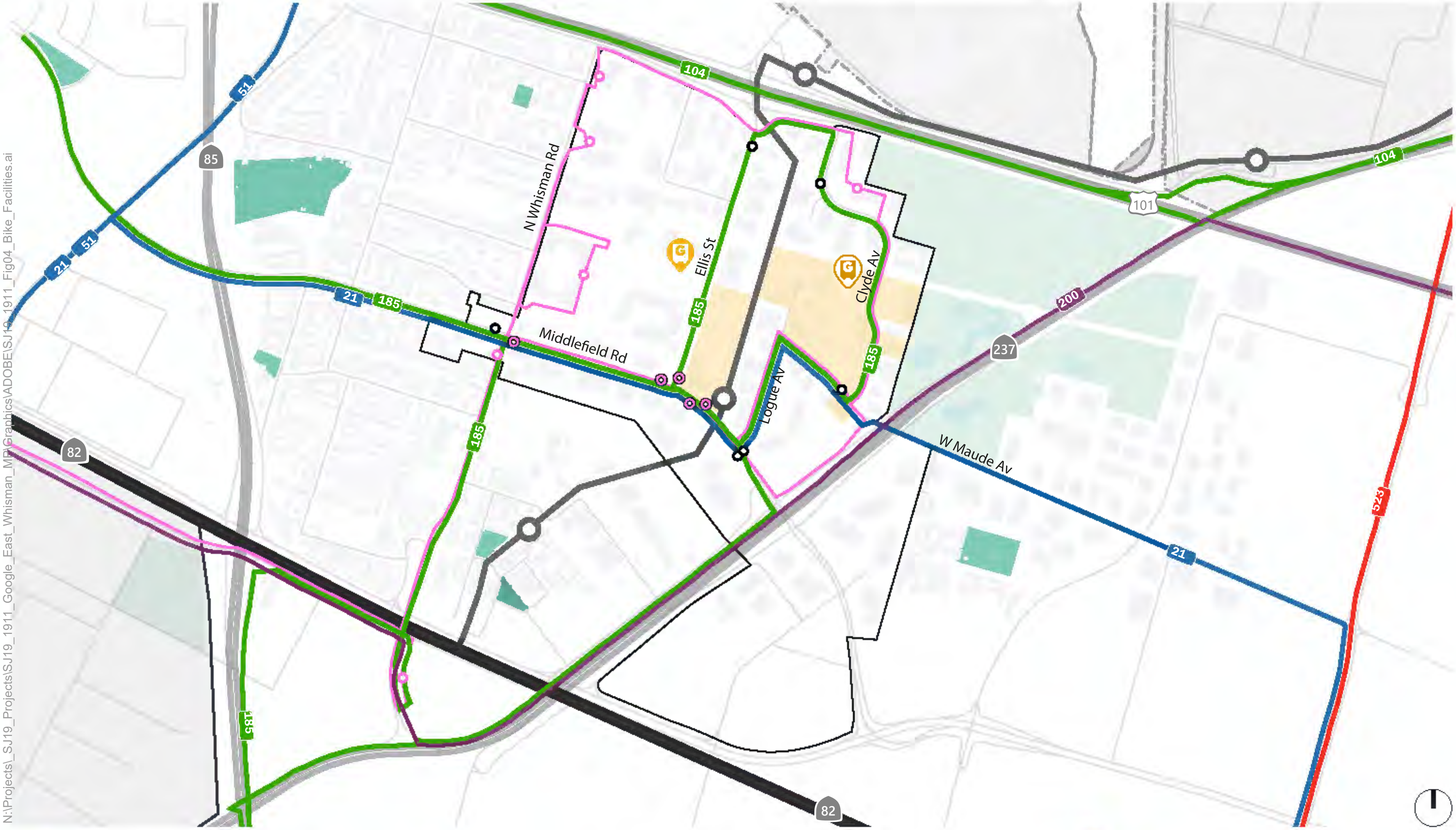
Shuttle Service

There are two shuttles operating in the Plan area: the MVgo East Whisman shuttle and the Mountain View Community Shuttle. MVgo, operated by the Mountain View Transportation Management Association (MVTMA), provides free shuttle service to reduce traffic volumes for the benefit of the community. While this service is targeted at commuters accessing employment areas in East Whisman, it is available for use by all members of the public. The East Whisman shuttle is funded by MVTMA member companies such as Intuit, Samsung Research America, Google, and Symantec. Currently two shuttle vehicles operate on 15-minute headways; a third would be added if ridership increases or if there is demand for midday services. Currently, the closest stops to Middlefield Park are located are on Clyde Avenue, Maude Avenue and the Middlefield LRT Station.

The Mountain View Community Shuttle is a free service connecting residential neighborhoods, civic and recreational centers, shopping and entertainment areas, and medical centers throughout Mountain View. An existing shuttle stop is located on the western edge of the EWPP area on Whisman Road at Middlefield Road.

GBus Shuttle

GBus, Google's worker shuttle, also operates in the Plan area. Google workers can use GBus for free to travel between Google office buildings in Mountain View and Sunnyvale. There is one GBus shuttle stop in the Plan area at Google's Quad Campus between Ellis Street and East Whisman Road. To promote GBus ridership, a second GBus stop will be added in the Plan Area on the planned service street that connects the Logue Avenue extension and Clyde Avenue.



Project Site

East Whisman Precise Plan Boundary

Local Bus

Express Bus

Frequent Bus

BART Connector Shuttle

VTA Light Rail

MVGo Route

Caltrain

VTA Light Rail Station

VTA Bus Stops

MVGo Stops

GBus Stop

Proposed GBus Stop

Figure 3

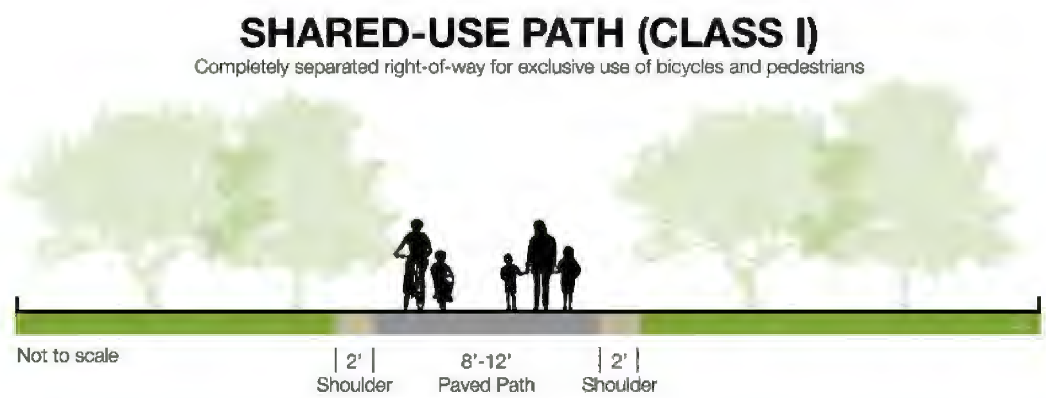
Transit Service Map

Existing Pedestrian and Bicycle Facilities

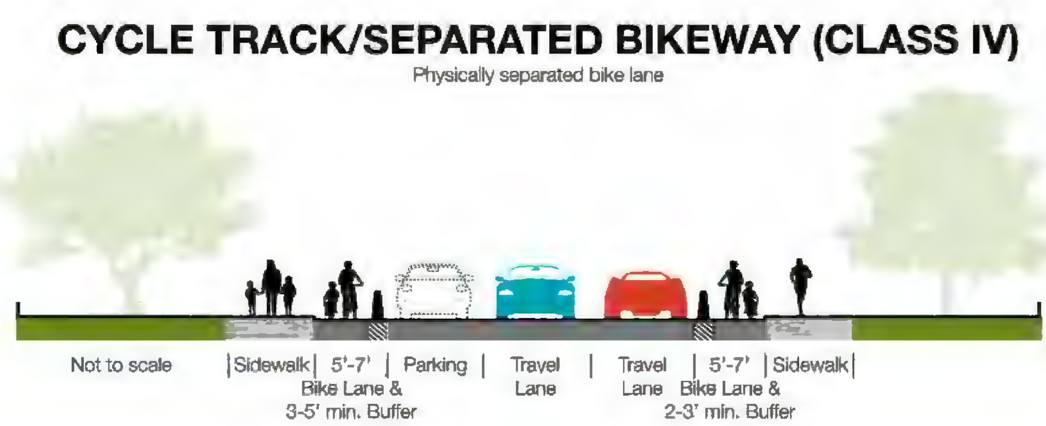
Existing Bicycle Facility Types

The California Department of Transportation (Caltrans) recognizes four classifications of bicycle facilities:

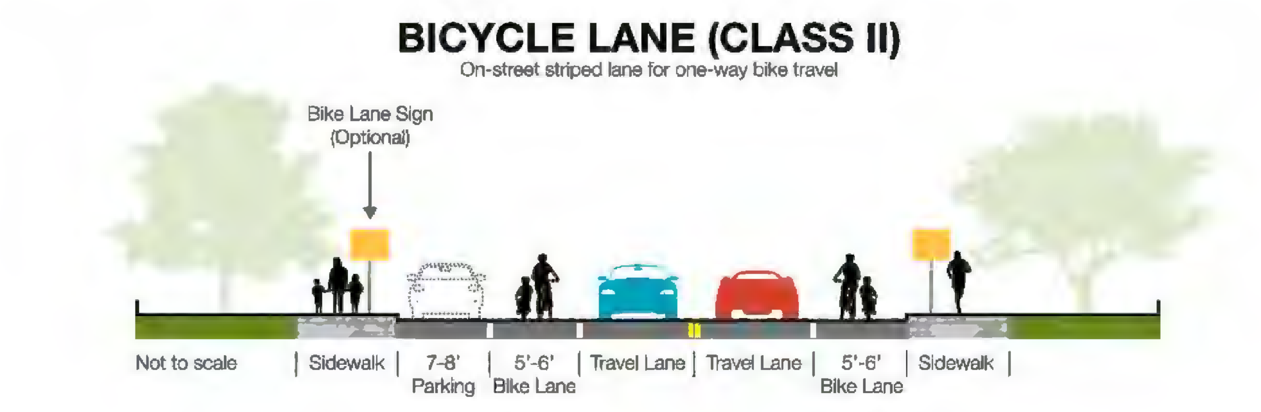
- **Class I Shared-Use Path**, commonly referred to as a Multiuse Trail, is a facility separated from automobile traffic for the exclusive use of bicyclists. Class I facilities can be designed to accommodate other modes of transportation including pedestrians and equestrians, in which case they are referred to as shared use paths.



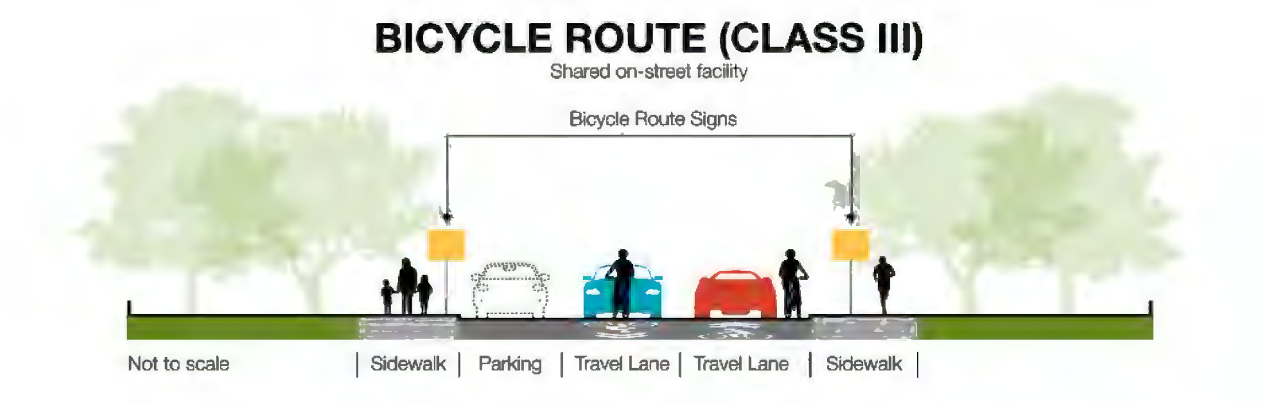
- **Class IV Cycle Track or Separated Bikeway** is a facility that combines elements of Class I and Class II facilities. They offer an exclusive bicycle route immediately adjacent to a roadway similar to a Class II facility but provide a physical separation from traffic with plastic delineators, raised curb, or parked automobiles.



- **Class II Bicycle Lane** is a dedicated facility for bicyclists immediately adjacent to automobile traffic. Class II facilities are identified with striping, pavement markings and signage, and can be modified with a painted buffer to become a buffered bicycle lane (Class II).



- **Class III Bicycle Route** is an on-street route where bicyclists and automobiles share the road. They are identified with pavement markings and signage and are typically assigned to low-volume and/or low-speed streets.



The *VTA Bicycle Technical Guidelines* (December 2012) recommends that Caltrans standards regarding bicycle facility dimensions be used as a baseline, and provides supplemental information and guidance on when and how to better accommodate the many types of bicyclists.

Existing and Planned Bicycle Facilities

The locations of existing and planned bicycle facilities are shown on **Figure 4**. As shown in the figure, multi-use paths are located throughout the EWPP area including along Hetch Hetchy Aqueduct Trail and the LRT tracks; bicycle lanes on Whisman Road, Ellis Street, Middlefield Road, Clyde Avenue, Logue Avenue, and Maude Avenue; and a bike route on Fairchild Drive.

City of Mountain View Bicycle Transportation Plan

The Mountain View Bicycle Transportation Plan Update (November 2015) summarizes goals for improving the bicycle network, existing and proposed facilities, and programs involving education, enforcement, and promotion. The Plan was developed in conformance with several other plans including the 2030 Mountain View General Plan, the Santa Clara Valley Transportation Authority Countywide Bicycle Plan, the Metropolitan Transportation Commission Regional Bicycle Plan, the Santa Clara County Trails Master Plan, and the Caltrans Streets and Highways Code Section 891.2.

A number of the plan's proposed facilities will improve regional bicycle access to the Middlefield Park project, including the following improvements listed by location and improvement:

- Ellis Street- Fairchild Drive to Manila Drive (Class I Trail/ Shared Use Path Improvement; Class II Bike Lane Improvement)
- Fairchild Drive- North Whisman Road to Ellis Street (Class II Bike Lane Improvement)
- North Whisman Road- Fairchild Drive to East Middlefield Road (Class II Bike Lane Improvement)
- Fairchild Drive- Leong Drive to North Whisman Road (Class III Bike Boulevard Improvement)
- Moffett Boulevard- Central Expressway to Clark Road (Class IV Separated Bikeway Improvement)
- Old Middlefield Way- Middlefield Road to Permanente Creek Trail (Class IV Separated Bikeway Improvement)

Santa Clara Countywide Bicycle Plan

The Santa Clara Countywide Bicycle Plan (May 2018) synthesizes other local and county plans into a comprehensive 20-year cross-county bicycle corridor network and expenditure plan. The long-range countywide transportation plan and the means by which projects compete for funding and prioritization are documented in the Valley Transportation Plan (VTP) 2035 (adopted in January 2009). The Countywide Bicycle Plan includes a planned bicycle network of 24 routes of countywide or inter-city significance.

A number of proposed facilities in the Plan will improve the regional bicycle access to the Middlefield Park project, including the following improvements listed by location and description of the improvement:

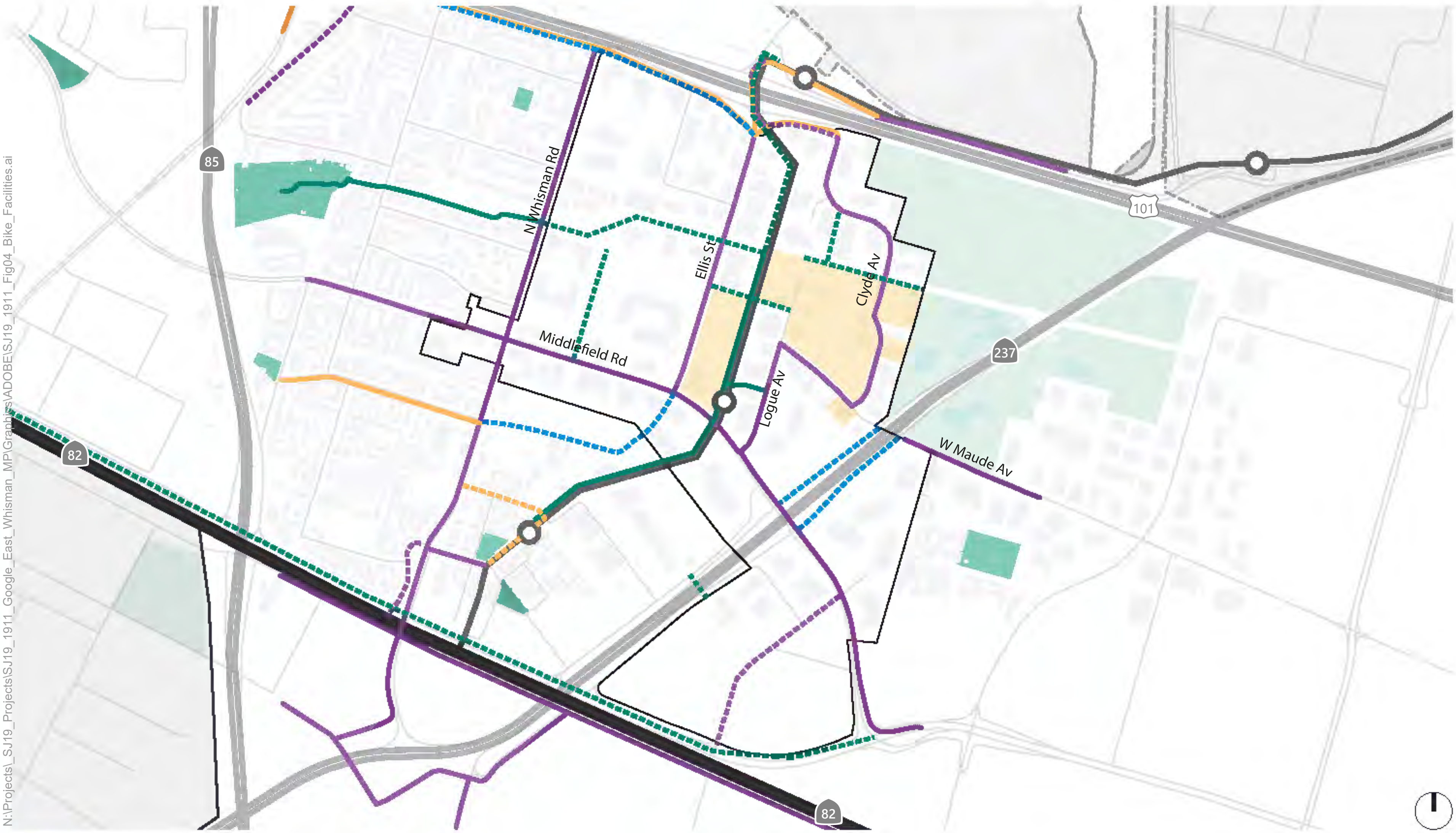
- US 101 & SR 237 & VTA Light Rail (Mary Avenue, Roadway Extension/Overcrossing)
- SR 85 (Mary Avenue, Potential Bike-Ped Bridge)
- SR 237 (West Channel Trail, Potential Bike-Ped Undercrossing)
- Stevens Creek Boulevard (Carmen Road, Potential Bike-Ped Bridge)
- US 101 (Old Gilroy Street, Potential Bike-Ped Bridge)
- US 101 (Ahwanee Avenue, Potential Bike-Ped Bridge)
- US 101 (West of Shoreline Boulevard, Potential Bike-Ped Bridge)
- Mathilda Avenue (US 101 & SR 237, Mathilda Freeway Interchange Improvements)
- Bernardo Avenue (Caltrain & Central Expressway, Potential Bike-Ped Undercrossing)
- Castro Street/Moffett Boulevard (Caltrain & Central Expressway, Potential Bike-Ped Undercrossing)

East Whisman Precise Plan

The Revised Draft East Whisman Precise Plan (November 2019) outlines the policies and design guidelines for bicycle facilities within the Precise Plan area. Most of the bicycle improvements identified in the Mountain View Bicycle Transportation Plan Update and the Santa Clara Countywide Bicycle Plan are also mentioned in the Precise Plan.

At some locations, the East Whisman Precise Plan proposes bicycle facility improvements that are not included in either document mentioned above, including the following:

- East Middlefield Road-east of North Whisman Road to North Bernardo Avenue (Class IV Separated Bikeway Improvement)
- Logue Avenue- East Middlefield Road to north terminus (Class IV Separated Bikeway Improvement)
- West Maude Avenue- Logue Avenue to SR 237 Interchange (Class IV Separated Bikeway Improvement)
- Grade-Separated Overcrossing between Ravendale Drive and Ferguson Drive (Class I Trail/ Shared Use Path Improvement)



Project Site

East Whisman Precise Plan Boundary

Existing Bike Network

Planned Bike Network

Class I - Shared-Use Path

Class II - Bike Lanes

Class III - Bike Route

Class IV - Separated Bikeway

Figure 4

Existing and Planned Bicycle Facilities

3. Middlefield Park TDM Plan

Office TDM Plan

The region's transportation challenges affect the entire community, crossing jurisdictional boundaries and spanning both public and private interests. Google will continue to be a leader in pursuing regional transportation solutions and delivering programs and services that improve transportation for the workforce and the community at large. Much of the work will benefit the entire community: safer pedestrian and bike routes; effective alternatives to driving; and a number of programs designed to encourage biking, carpooling, and public transit use.

To deliver its Office TDM Plan, Google relies on a team that has already delivered the unprecedented success Google has experienced to date, particularly in North Bayshore. The team is led by a full-time TDM manager responsible for managing and continuously improving the program. Key principles guiding the team and its program development are measurement, experimentation, rapid adjustment, and a deep user understanding. Google is prepared to extend the Middlefield Park TDM measures to the existing Google buildings in the EWPP area.

The Office TDM Plan is based on existing TDM services provided to Google workers in the North Bayshore area and will be expanded to provide some transportation choices unique to the Middlefield Park development area including access to light rail and Caltrain. Google's SOV mode share is lower than that for average Mountain View residents. As shown in **Table 3**, less than 44% of Google's North Bayshore workers commute by SOV trips, demonstrating that Google's TDM strategies can influence travel behavior and mode choices of its workers.

Table 3: Mountain View Mode Shares[1]

Mode	Google Workers		Average Resident MV Citywide Mode Share (2018)[2]
	NBS Mode Share (2017)[2]	MV Citywide Mode Share (2019)[2]	
SOV[3]	43.8%	42.2%	70.5%
GBus and connectors	36.4%	31.3%	-
Bike and Walk	6.8%	6.7%	7.7%[4]
Carpool and Vanpool	3.9%	3.9%	6.7%
Public Transit	1.6%	2.0%	7.5%
Taxis and TNCs[5]	2.9%	2.4%	-[4]
Telecommute	4.6%	11.5%	4.9%
Total	***100%***	***100%***	***100%***
Non-SOV Mode Share[6]	***56.2%***	***57.8%***	***29.5%***

Notes:

1. Annual average mode share. This mode share excludes out of office responses.
2. Percentage of employees using this mode.
3. SOV = Single occupancy vehicles, including single occupancy passenger cars and motorcycles.
4. The citywide mode share for Mountain View residents reports biking, walking, taxis, drop-off, etc. as "Other". This table reports all "Other" responses as Bike and Walk.
5. TNC = Transportation network company, such as Uber, Lyft and potentially other ride sharing services.
6. Percent of Google employees commuted via alternate modes to Mountain View campuses or worked from home.

Source: Google, 2019.

Overview of Office TDM Strategies

Table 4 outlines the proposed office TDM strategies that will be used by Google to reduce worker vehicle trips and vehicle miles traveled in the East Whisman planning area. For each strategy offered under this plan, we have indicated whether the strategy is currently offered to Google employees in the North Bayshore area. These strategies are grouped into three categories of requirements identified in the EWPP followed by a summary of physical design and operational elements proposed in the plan. The categories are as follows:

- EWPP Site Requirements
- EWPP Operational Requirements
- EWPP Alternative Requirements
- Google Project Design Elements
- Google TDM Operational Elements

As **Table 4** shows, Google already offers a majority of City TDM requirements identified in the EWPP. Google will include the strategy of providing a reduced parking supply maximum for the projects. In addition, Google intends to use transit pass subsidies to maximize the use of light rail and Caltrain at Middlefield Park by its workers. Google will also consider implementation of a parking cash out program, if needed, to meet their trip cap.

Table 4: Office TDM Strategies

Category / Strategy	Description	East Whisman
EWPP Site Requirements		
Priority Parking for Carpools and Vanpools	Preferential parking spaces for carpool and vanpool users are provided near each building entrance.	✓
Bicycle Parking, Shower, and Changing Facilities	Short-term bicycle parking is located conveniently near building entrances and valuable building space is dedicated to secure indoor bike rooms. Showers and lockers are almost ubiquitous in workspaces.	✓
Alternative Mode – Design Features	All streets in Middlefield Park will include biking and walking facilities designed for all ages and abilities. Sidewalks are wide, tree-lined, and include many new routes between residences and offices, creating a dense and flexible network of routes for pedestrians. New GBus shuttle stops will be provided on Street B west of Ellis Street and on the proposed service street between Logue and Clyde Avenues to serve Google workers at Middlefield Park.	✓
Limited Parking Supply	Parking will be provided at a rate of 2 spaces per 1,000 square feet for the office development. Limited or reduced parking is a complementary strategy when combine with incentives to use alternative commute modes. Google proposes to implement a parking management program for the office buildings.	✓
Car Sharing Parking Supply Maximum	Employees who bike, walk, use transit, carpools, or vanpools will be able to utilize a car share vehicle located on-site for errands or meetings. Google has a fleet of shared vehicles (GFleet) and subsidized memberships to external car sharing organizations that are located in the EWPP area.	✓
EWPP Operational Requirements		
MVTMA Membership	Google was a founding member of the Mountain View Transportation Management Association (MTMA) and continues to be a member in good-standing.	✓
Subsidized or Free Transit Passes (including VTA LRT / Caltrain)	Google subsidizes the cost of VTA SmartPass transit passes and will include Caltrain passes for Middlefield Park workers. Financial incentive is one of the most effective ways to increase the number of employees using transit to commute to/from work.	✓
Subsidized or Free Vanpool or Carpool	Google provides vans, fuel, toll expenses, and vehicle maintenance for its employee vanpools.	✓

Table 4: Office TDM Strategies

Category / Strategy	Description	East Whisman
EWPP Alternative Requirements		
Bike Sharing	Google currently operates and maintains a unique fleet of more than 2,000 shared bicycles. The focus of the program is to provide convenience and flexibility for on-campus transportation and reduces the need for workers to use their car during the workday.	✓
Emergency Ride Home Program	Employees who use shuttles, public transit, carpools, or vanpools are guaranteed a ride home in case of emergency or if they need to work late.	✓
Parking Cash-Out	As part of its Parking Management Program, Google is investigating a possible cash-out program to incentivize use of alternative mode of travel.	*
Google Project Design Elements		
Fund Area Bicycle and Pedestrian Improvements	The Middlefield Park master plan includes extensive bicycle and pedestrian improvements that will increase biking and walking to/from the project site. Some of the key improvements include: • A two-way cycle track on Ellis Street • Class I and IV facilities in the Greenways and roadways, respectively • A bicycle/pedestrian overcrossing of the VTA light rail • Enhanced pedestrian crossings with high visibility striping and potential signalization	✓
On-Site Amenities and Services	On-site amenities and services provided at Google reduce the number of trips that workers need to make during the day and increase the feasibility of using an alternative to a SOV for commuting. Some of these amenities which will likely be offered at Middlefield Park include on-site food, fitness center, banking services, and daycare (shared with residential uses).	✓
On-Site Bike Repair Facilities	Google's GBike program staff will provide a self-repair station within Middlefield Park. Additionally, Google hosts mobile bike-repair companies in Google parking lots on a regularly scheduled basis to serve the needs of any interested bicyclists in Middlefield Park.	✓
Google TDM Operational Elements		
Commuter Shuttle Services	Google has an extensive employer shuttle program (GBus) that serves its campuses.	✓
Last Mile and Campus Shuttle Services	Google provides GRide shuttles that connect their Sunnyvale and Mountain View campuses further supporting employees who commutes by non-SOV modes and reducing vehicle trips on surrounding roadways. Through the MVTMA, Google supports the MVgo shuttle to the downtown Caltrain station.	✓

Table 4: Office TDM Strategies

Category / Strategy	Description	East Whisman
On-site Transportation Coordinator	Google has a team of dedicated transportation professionals that fill the role of TDM Coordinator. They proactively plan for changes in employee travel demand and adjust existing measures and implement new services accordingly.	✓
Flexible Work Schedule	Flexible work schedules can allow employees to make better use of transit and/or reduce the number of days they travel to the office and/or move vehicle travel outside of the peak periods.	✓
Marketing and Information	Google markets and promotes the TDM program, which is critical to its success. These activities include marketing materials, new hire orientation, transportation fairs, bike to work day, commuter information boards/kiosks, and links to relevant transportation websites.	✓
Pre-tax Commuter Benefits	Employees have the option of purchasing transit passes using pre-tax dollars.	✓
Biking Incentives	The Commuter Bike On-ramp Program offers $300 subsidies to purchase a bicycle for those cyclists who complete a six-month program. Bike2Work is a quarterly incentive that offers rewards to those who take a self-powered commute mode to work.	✓
Bike Buddy Program	The Bike Buddy program is part of the Commute Buddy program, which matches existing alternative transportation users with individuals who want to try a new alternative commute. The Bike Buddy program is included in the overall marketing and communication effort.	✓
Bike Loaner Program	Google operates a shared-bike program with over 800 high-quality commuter bikes called "VBikes." The purpose of the VBike program is to assign bikes on an extended basis to visiting or short-term workers (notably interns) for commute purposes.	✓
Rideshare Matching Services	Google provides an enhanced rideshare program available to all Google workers. Using Waze technology, potential carpoolers are able to dynamically match up through an app and drivers are reimbursed for their costs.	✓
Expanded Carpool Matching	Google has experimented with other shared-ride services: Scoop and Lyft Line. In the future, if further mode shift is necessary, Google has experience with each of these services and knows how to use them to drive additional behavior change.	✱

✱ - Potential Future Offering

Descriptions of Office Programs

Priority Parking for Carpools and Vanpools

Google will provide priority parking for carpools and electric vehicles at Middlefield Park. To respond dynamically to increased demand for priority parking for carpools and vanpools, the use of priority parking spaces is monitored on an ongoing basis to determine whether a greater number of priority spaces is required.

Google also provides priority parking for expectant mothers and its own GFleet car-share. These parking spaces will also be monitored and have dual designations as the fleet of electric vehicles and number of carpool vehicles grow.

Bicycle Parking, Shower, and Changing Facilities

Google has long been a supporter of biking and their success in sustaining a bike-friendly culture is designed into their projects including Middlefield Park. Valuable building space is dedicated to secure indoor bike rooms. Showers and lockers are ubiquitous in workspaces. The overall interest is in ensuring that workers who bike feel their modal choice is respected, and even prioritized over autos.

Short-term bicycle parking serves the need for quick access and secure parking without the hassle of bringing a bike inside a building. Short-term parking will be located conveniently in centralized areas so that they are activated by other activities (e.g. coffee carts, cafés, building entrances, etc.). This parking is friendly to visitors and intended for daily and hourly use.

Long-term parking for bikes is provided in bike rooms inside buildings. Bike rooms are located to provide the best-of-route experience for cyclists, located close to showers, lockers, and changing rooms. Additionally, 20-25% of secured spaces will accommodate e-bike charging. Indoor rooms protect bikes from inclement weather, and controlled access (badge) ensures bicycles are safe from theft.

Alternative Mode – Design Features

In accordance with best design practices for active mobility consistent with the EWPP, all streets in Middlefield Park include biking and walking facilities designed for all ages and abilities. Middlefield Park offers a dense, interconnected, multimodal network that prioritizes the mobility of residents, employees, visitors, and the environment. New streets, car-free paths, and a new pedestrian and bike crossing across the VTA corridor will combine to increase the porosity of Middlefield Park and make walking an attractive and convenient way to get around. New pedestrian crossings along Ellis Street, Logue Avenue, and Clyde Avenue will improve the pedestrian experience and offer varied choices for pedestrians to move from origin to destination. All pedestrian crossings will follow best practices and include high-visibility continental striping and signalization where warranted.

Middlefield Park will also provide improved bicycle facilities that connect to regional facilities planned and identified in the VTA's Santa Clara Countywide bicycle plan. One key improvement will be to expand the Hetch Hetchy Trail eastward into Middlefield Park to provide a low-stress, off-road connection to the 21-mile-long Stevens Creek Trail. The trail extension, together with protected bike lanes on Ellis Street, Middlefield Road, Logue, Maude and Clyde Avenues, links into the key north-south route of Mary Avenue, which is included in the Sunnyvale Active Transportation Plan's All Ages and Abilities network. Within the project, a new multi-use, shared path with an alignment parallel to the VTA corridor through Middlefield Park provides people of all ages and experience levels comfortable bike access throughout the site, and connects into the two major east-west thoroughfares of East Middlefield Road and Hetch Hetchy Trail. A new multi-use, shared path that traverses the proposed Maude Park is also planned, connecting the new pedestrian/bicycle bridge to the proposed Class IV separated bikeways on Clyde Avenue.

Bike infrastructure throughout Middlefield Park follows best practices to prioritize the safety of all road users and support conversion of auto trips to bike trips. The facilities will be either Class I off-road multi-use paths or Class IV separated bikeways on roadways. The clear demarcation and safety buffers along the bike lanes improve both safety and the perception of safety for bikers. Research indicates that protected bike lanes not only increase safety for riders, they increase the frequency with which people bike, biker's perception of facility safety, and even the perception of safety nearby residents have of the facility.

Limited Parking Supply

Google remains committed to reducing overall parking supply and optimizing the use of parking to reduce vehicle trips and minimize the amount of space dedicated to parking. As part of Middlefield Park's ambitious plan to model environmental and transportation best practices, office parking will be limited to 2.0 spaces per 1,000 gross square feet of office development.

The reduced parking rate will be achieved through a parking management plan that will lower use of SOV by Google employees by encouraging and incentivizing the use of other modes including transit and active modes of travel. The program identifies a combination of incentives and policies that work together to manage the daily demand for parking and shift users to alternative modes as efficiently as possible. Options include offering points, giving awards for joining a commute program, and giving large awards for hitting milestones, daily charges, and incentives. In addition, the provision of housing within the Middlefield Park development will reduce the office parking demand by eliminating commute trip by auto.

In addition to these TDM strategies, the Middlefield Park Master Plan includes extensive bicycle infrastructure improvements including separated bikeways, cycle tracks, and greenway with multi-use paths.

This investment in bicycle infrastructure is designed to increase the use of bicycles as a commute mode. Other infrastructure improvements in the East Whisman area include new GBus shuttle stops on Street B west of Ellis Street (between the Middlefield Park and Quad Campus) and on the proposed east-west service street between Logue and Clyde Avenues.

Car Sharing Parking Supply Maximum

Workers will have access to several car-sharing options, including Google's own fleet of shared vehicles (GFleet) and subsidized membership to external car-sharing organizations that may locate in the EWPP area. Access to shared cars in East Whisman for things like errands, doctors' appointments, and off-campus meetings reduce workers' anxieties around leaving their cars at home.

The hallmark of its car-sharing service is called GFleet. Google maintains an all-electric fleet of over 85 car-share vehicles available to all employees, free of charge, during work hours. GFleet vehicles are used for trips that begin and end at the Google Campus. Google also provides free employee membership to Zipcar and reimburses business travel, while reduced rates are available for personal use. Zipcars can be rented for longer periods of time than GFleet vehicles, including weekends, providing workers with round-the-clock options.

Mountain View TMA Membership

Google was a founding member of the Mountain View Transportation Management Association (MTMA) and continues to be a member in good standing. Membership in and coordination with the TMA will continue to be an element of Google's TDM approach as the TMA develops its services and functions.

Subsidized or Free Transit Passes (LRT/Caltrain)

Currently, Google supports commuters using public transit by offering a pre-tax commuter benefit. Google is actively investigating offering free transit passes, especially to encourage commutes by VTA LRT and Caltrain at the Middlefield Park campus.

Subsidized or Free Vanpool or Carpool

Google currently subsidizes vanpools by providing vans, fuel, toll expenses and vehicle maintenance. Google plans to expand this program to increase participation, with a particular focus on areas not well-served by the shuttle service. In the near future, with the implementation of its Parking Management program, it is anticipated that vanpool and carpool participants will be supplemented by programs that encourage carpooling and vanpooling. Such programs include financial incentives, priority parking spaces, or other creative solutions.

Bike Sharing

Bike-sharing is a key part of Google's on-campus transportation strategy. Google currently operates and maintains a unique fleet of more than 2,000 colorful shared bicycles, known affectionately as "GBikes." The focus of the signature GBike program is to provide convenience and flexibility for on-campus transportation. On-campus transportation alternatives reduce the need for employees to use their car during the workday, thereby giving them one less reason to drive to work.

GBikes are readily available on campus; users can simply pick one up and go. GBikes can be left at any building entrance but are most often used between Google buildings and to reach shuttle stops on campus.

Electric pedal-assist bicycles, or e-bikes, are the newest additions to Google’s shared bicycle fleet. E-bikes are offered to Google employees for commuting between Google’s campuses in the area.

Emergency Ride Home Program

Google’s Emergency Ride Home (ERH) Program is available to all employees who use alternate modes of transportation and who experience an emergency. The ERH Program includes roadside assistance for cyclists, rides home in a vanpool and/or taxi reimbursement.

ERH is a supporting program that makes transit, shuttle services, carpooling, ridesharing, and bicycling viable transportation choices. Like all of its transportation programs, ERH is managed through the Google Transportation Team.

Parking Cash-Out (Alternative/Future Program)

Google is developing a program to manage parking usage; the program identifies a combination of incentives and policies that work together to manage the daily demand for parking and shift users to alternative modes as efficiently as possible. Options include points, awards for joining a commute program, and large awards for hitting milestones, daily charges, or incentives. Google is investigating a possible cash-out program as one of the parking program components.

Fund Planning Area Bicycle and Pedestrian Improvements

As mentioned previously, Middlefield Park offers a dense, interconnected, multimodal network that prioritizes the mobility of residents, employees, visitors, and the environment. The Middlefield Park master plan includes extensive bicycle and pedestrian improvements that will increase biking and walking to/from the project site. Some of the key bicycle and pedestrian improvements include:

- A two-way cycle track on Ellis Street
- Class I shared-use paths in Greenways
- Class IV separated bikeways on Middlefield Road and Logue, Maude, and Clyde Avenues
- A bicycle/pedestrian overcrossing of the VTA light rail
- Enhanced pedestrian crossing with high visibility striping and potential signalization

Google will help the City obtain funding for these bicycle and pedestrian improvements to create a comprehensive network to serve the community as a whole. These improvements are designed to substantially increase the use of bicycles as a commute mode.

On-Site Amenities and Services

The on-site amenities and services provided at Google reduce the number of trips workers need to take during the day and increase the feasibility of using an alternative to a single-occupancy vehicle for commuting. Some of these amenities will be offered at Middlefield Park (on-site food, fitness, etc.) while others are provided elsewhere nearby. Types of amenities and services include:

- **Dining:** On-site food services
- **Health:** On-site fitness centers
- **Facilities:** On-site services such as ATMs and laundry
- **Daycare:** Included within residential development

On-Site Bike Repair Facilities

Google's GBike program staff will provide a self-repair station within Middlefield Park, as well as at bike parking areas throughout Middlefield Park. Additionally, Google hosts mobile bike-repair companies in

Google parking lots on a regularly scheduled basis to serve the needs of interested bicyclists in North Bayshore.

Commuter Shuttle Services

Google's commuter shuttle program was started in 2004 and has grown into one of the Bay Area's largest and most successful employer shuttle programs. The shuttle program is operated on weekdays from origin stops between approximately 6:00 and 10:30 a.m. and departs from East Whisman from approximately 3:30 to 10:30 p.m. The shuttles are free to employees and are also available to contractors for a nominal fee in accordance with federal tax codes.

The Google Transportation Team actively manages the shuttle program in concert with contractor suppliers who dispatch and provide drivers. Together, the team responds to day-to-day challenges such as traffic accidents, surges in demand, and bus maintenance. One hallmark of the shuttle program is the ability to adjust service to meet growing demand. The Google Transportation Team continuously monitors population growth, preferences, and trends via regular employee surveys and feedback.

Campus and Last Mile Shuttle Services

Through its association with the MVTMA, Google currently participates in providing MVgo as the last mile shuttle service between the downtown Mountain View Caltrain station to the EWPP area and Middlefield Park. With the increase in employment from Middlefield Park and increase in transit incentives for Google workers to use Caltrain, there is the potential need to expand the capacity of this service to meet future demand. Alternatively, Google could use their existing GRide intercampus shuttle service to increase capacity.

GRide is an on-demand transportation service similar to a taxi, serving longer trips between Google facilities for employees who do drive private cars to campus. This service provided over 75,000 trips in 2014.

On-site Transportation Coordinator

Google employs a full-time TDM manager who oversees and coordinates transportation information. The TDM manager is responsible for identifying opportunities to enhance the marketing and communication of transportation options, and for working with both internal and external partners to develop and communicate incentive programs. The TDM manager is assisted by Google Building Liaisons, who coordinate with workers at the building level.

Flexible Work Schedule

Flexible work schedules can allow employees to make better use of transit and/or reduce the number of days they travel to the office and/or move vehicle travel outside of the peak periods. Allowing employees to work off-site and providing them with the necessary infrastructure (i.e., internet access and internal data access) reduces the number of vehicle trips entering and exiting the site and on the roadway system. Google offers the following:

- Occasional work from home (with supervisor support)
- Schedule shifting
- Working from other offices or remote locations
- Part-time schedule
- Job sharing

Employees make decisions on their schedule with their managers.

Marketing and Information

A key part of Google's TDM program is the communication of travel options and a method for communicating any travel-related issues on a day-to-day basis. Travel information needs to be easily accessible to new and existing workers, as well as visitors to the Google campus.

The Google Transportation Team operates an extensive website describing all available transportation services and supportive programs. The team is also responsible for email announcements, newsletters, and maintaining up-to-date information on the intranet site concerning commuting conditions, traveler information, and coordinating the relay of this information with Building Liaisons.

As part of a welcome package, HR provides new workers with information about their transportation options, including directions to the transportation intranet site, contact information for their Building Liaison, as well as instruction for finding solutions to transportation (and other) issues. An internal online support system is used to respond to individual questions and issues and to collect feedback across all of Google.

Pre-tax Commuter Benefits

Google provides pre-tax commuter benefits through payroll deductions and a third-party provider. Consistent with the provisions in the federal tax code, workers have the opportunity to pay for transit passes or parking expenses using pre-tax dollars.

Biking Incentives

Google provides two bicycling incentive programs in the Parking Management Program. These incentives are the Commuter Bike On-ramp Program and the Bike2Work Points Program. The Commuter Bike On- ramp Program offers $300 subsidies to purchase a bicycle for cyclists who complete a six-month program. Bike2Work is a quarterly incentive offering rewards to those who take a self-powered commute mode to work.

Bike Buddy Program

The Bike Buddy program is part of a larger Commute Buddy program. This effort, overseen by the Google Transportation Team, matches existing alternative transportation users with individuals who want to try a new alternative commute. The Bike Buddy program is included in the overall marketing and communication effort.

Bike Loaner Program

Google operates a shared-bike program with over 800 high-quality commuter bikes called "VBikes." The purpose of the VBike program is to assign bikes on an extended basis to visiting or short-term workers (notably interns) for commute purposes.

Rideshare Matching Services

Google provides an enhanced rideshare program available to all Google workers. Using Waze technology, potential carpoolers are able to dynamically match up through an app and drivers are reimbursed for their costs. Waze carpoolers can use designated carpool parking spaces. The aim of the program is to allow workers to input specific parameters and preferences, such as origins, destinations, how far they are willing to travel to get picked up, etc.

Expanded Carpool Matching

Google has experimented with other shared-ride services: Scoop and Lyft Line. In the future, if the opportunity arises or if further mode shift is necessary, Google has experience with each of these services and knows how to use them to drive additional behavior change.

Overview of Residential TDM Strategies

The Residential TDM Plan includes programs that provide inherent transportation benefits to a residential community. The EWPP traffic impact analysis assumed approximately 40% of housing units in the planning area will have one or more residents who work within the planning area. Since residents who live locally are more likely to walk or bike to work, significant vehicle trip reductions are built into the fabric of Middlefield Park. The Residential TDM Plan also includes mobility programs and infrastructure investments that promote car-free or low-driving lifestyles for residents.

Since the property management companies and homeowner associations (HOA) will be responsible for the implementation of the TDM plan for their project, the following discussion outlines the types of plans that could be used to meet the EWPP residential TDM requirements. **Table 5** outlines the proposed residential TDM strategies that can be used by property management companies and HOA to reduce residential vehicle trips and vehicle miles traveled in the East Whisman planning area.

Similar to the office strategies, the residential strategies are grouped into the two categories of requirements specifically called out in the EWPP as well as other programs that can be considered for the residential development. The categories are as follows:

- EWPP Site Requirements
- EWPP Operational Requirements
- Other Residential Programs

Table 5 outlines the residential TDM strategies that will be used by residential developers to reduce resident vehicle trips and vehicle miles traveled in the East Whisman planning area.

Table 5: Residential TDM Strategies

Category / Strategy	Description	East Whisman
Site Requirements		
Parking Supply Maximum	Middlefield Park will provide a reduced parking supply for the residential uses. The parking will be provided at an average rate of 0.80 spaces per dwelling unit.	✓
Car Sharing Parking Supply Maximum	On-site car-share vehicles will be provided to give residents affordable, 24/7 access to a car when they need one. Car-share spaces shall be located in or near publicly accessible areas to allow use by non-residents.	✓

Table 5: Residential TDM Strategies

Category / Strategy	Description	East Whisman
Short and Long-term Secure Bike Parking	Short and long-term residential bicycle parking will be located in secure locations close to the main entrances of the residential buildings. The long-term parking will be secured using a fob, key, or another secure access mechanism to residents. The bike parking will be designed to include spaces for cargo bicycles.	✓
Common, Shared, Collaboration Space	Residential projects over 100 units shall provide a shared, common collaborative workspace available to residents and their guests. This amenity can be offered in partnership with nearby residences or businesses.	✓
Alternative Mode Design Features	Middlefield Park incorporates design features that promote walking, biking and transit use. There are also plans to provide mobility hubs that could include bike and scooter programs.	✓
Accessible, secure storage space for deliveries	Accessible, secure storage space for grocery and package delivery will be provided within each building to consolidate delivery trips by allowing carriers to make one stop for multiple recipients, instead of having to make several stops at different times.	✓
Operational Requirements (Property Managers / HOAs)		
Access to Bike Sharing	The developer will establish a Middlefield Park specific bike-share program or loaner bike program accessible to residents. One option is to pay to sponsor a docking station operated by an official bike-share provider at the residential site. alternatively, a site-specific loaner bike program may be provided where bikes are purchased and provided specifically for tenant use.	✓
Access to Local Transportation Information (website or leasing office)	Transportation concierge staff serves as a coordinator for all resident-related transportation services and concerns. The dedicated staff person will serve as the contact person for residents and can help with trip planning, accessing transportation benefits, and general program management.	✓

Table 5: Residential TDM Strategies

Category / Strategy	Description	East Whisman
Support / Promote Safe Routes to Schools	The transportation concierges will coordinate with the City of Mountain View and Mountain View Whisman School District to obtain Safe Routes to Schools materials that will be provided in the residential marketing materials and on websites and to encourage walking, school bus, and bike train effort.	✓
Provide Monetary Incentives for Alternative Modes	Residents in Middlefield Park may receive a monthly transit subsidy as either Clipper E-Cash or the VTA SmartPass to maximize the transit options available to meet their travel needs.	✓
Other Residential Programs		
Unbundled Residential Parking	Unbundled parking reduces monthly housing costs for households that do not wish to own and park a vehicle by separating the cost of a parking space from the rental or purchase price of a unit.	✓
Scooter-share Program	Bike and scooter-share increase the non-auto options for longer connections between locations or travel modes. Currently, there is no dock-based bike-share or scooter-share within the City of Mountain View so an agreement will be needed to ensure that the shared vehicles are available throughout the day. (A permit program for scooter-share is expected within the next two years.)	✱

✱ - Potential Future Offering

Description of Residential TDM Programs

Parking Supply (Reduced) Maximum

Middlefield Park is proposing to provide approximately 1,650 parking spaces for a total of 1,850 residential units, a parking supply rate of about 0.89 spaces per dwelling units. The project is proposing several TDM strategies that will contribute to minimizing car ownership of residents. **Table 5** lists the TDM strategies that will be deployed by the project to encourage residents to modes other than a SOV to commute to work or other trips during the middle of the day. However, the single most effective measures that will help reduce parking demand and car ownership for residents is unbundling parking from the rent.

Unbundled parking typically separates the cost of purchasing or renting parking spaces from the cost of purchasing or renting a dwelling unit. Saving money on a dwelling unit by forgoing a parking space acts as an incentive that minimizes auto ownership. Similarly, paying for parking (by purchasing or leasing a space) acts as a disincentive that discourages auto ownership and trip-making. This strategy also holds the key to the degree of effectiveness of other measures and incentives to discourage use of SOV by residents.

Given the proximity to surrounding employment centers, access to multiple modes of transportation including high quality transit (VTA LRT and Caltrain) to connect to jobs, retail, recreational, and entertainment destinations reduces auto ownership and parking demand. The availability and greater use of multiple technology enhanced mobility services by residents such as carshare (Uber, Lyft), micromobility (e-scooter share, bikeshare), and microtransit can lead to further reductions in parking demand as more residents use these services to travel from/to their residence. The expected decrease in single occupancy vehicle use and increase in ride hailing services combined with a reduction in car ownership and ultimately adoption of autonomous vehicles will significantly affect parking demand on-site. Providing a reduced parking supply supported by unbundled parking and a robust set of TDM measures will help the project to right-size parking in the short term and avoid oversupply of parking in the future.

Car Sharing Parking Supply Maximum

On-site car-share vehicles will be provided to give residents affordable, 24/7 access to a car when they need one. One car-share space is proposed for developments with 50 to 200 units. Developments with over 200 units shall provide two spaces, plus one for every additional 200 units. Car-share spaces shall be located in or near publicly accessible areas to allow use by non-residents.

In addition to having cars available on-site, membership subsidies will be provided to residents to reduce the financial barriers to using this fleet. At least one membership will be provided for each unit. The level of subsidy may vary between market rate and below market rate (BMR) units, with market rate households receiving a partial subsidy on annual memberships and BMR households receiving a complete subsidy on annual memberships.

Instead of paying for commercial car-share memberships, the developer may establish a development-specific car-share program by purchasing vehicles for sole use by residents. If this is provided on-site, residents can reserve a vehicle in advance and a stipend may be available for residents of BMR housing units.

Short and Long-term Secure Bike Parking

Short and long-term residential bicycle parking will be located in secure, well-lit, and attractive locations close to the main entrances of the residential buildings. The long-term parking will be secured using a fob, key, or another secure access mechanism to residents. The bike parking will be designed to include spaces for cargo bicycles. The EWPP plan bicycle parking standards are:

- one short-term bicycle parking space is required for every 10 units, and
- one long-term bicycle parking space is required for every unit.

Any unused publicly accessible, residential spaces will be made available to full-time workers of on-site retail or commercial uses and/or a residential loaner bike program. To ensure residents have priority to secure bike parking, the appropriate amount of spaces made available to workers will be determined by the Transportation Concierge Staff on a quarterly basis.

Common, Shared, Collaboration Space

An on-site collaboration space can encourage residents to work from home, i.e., telecommuting. A typical collaboration space could provide Wi-Fi, computers, printers, scanners, and meeting rooms. This type of workspace can directly reduce vehicle trips to and from a residential site by offering an alternative to commuting to another work site. Such an amenity is typically part of large rental buildings, though the size and specific services can vary. The EWPP requires residential projects with over 100 units to provide a shared, common collaborative workspace available to residents and their guests. This amenity can be offered in partnership with nearby residences or businesses.

Alternative Mode Design Features

As described previously, the Middlefield Park design incorporates a dense, interconnected, multimodal network that prioritizes the mobility of residents, employees, visitors, and the environment. The master plan includes new Greenways, new streets, and new pedestrian crossings that prioritize safe, convenient routes for pedestrians, bicyclists, and transit users. Providing safe, convenient transportation options will support conversion of travelers away from car trips and toward more sustainable modes. In addition to these traditional infrastructure improvements, the master plan outlines investments to maximize non-automotive travel to and around Middlefield Park including micromobility hubs where shared bikes or scooters will be located to facilitate multimodal trips.

Accessible, Secure Storage Space for Deliveries

Providing storage space for deliveries – such as groceries and online orders – can have a direct impact on reducing vehicle trips for a residential development. A centralized storage facility within each building can consolidate delivery trips by allowing carriers to make one stop for multiple recipients, instead of having to make several stops at different times. Building residents typically access deliveries through a locker system with unique pick-up codes that include the locker number and access times for the delivery recipient when building staff are unable.

Access to Bike Sharing

The developer can establish a Middlefield Park specific bike-share program or loaner bike program to make biking equally accessible to residents. This program may be structured in one of several ways. One option is to pay to sponsor a docking station operated by an official bike-share provider at the residential site. With the increase in dockless bike-share programs, an agreement could be established for rebalancing efforts to include placement near residential areas.

Alternatively, a site-specific loaner bike program may be provided where bikes are purchased and provided specifically for tenant use. This could also be coordinated with a local bike shop or a bicycle advocacy organization to launch and operate this program. If a site-specific program is implemented, cargo and/or family friendly bikes will be provided.

GBike, Google's bike sharing program for workers, can also be expanded for Middlefield Park resident access. (This program is discussed in greater detail earlier in this document.)

Access to Local Transportation Information

Transportation concierge staff serves as a coordinator for all resident-related transportation services and concerns. The key function of this role is to provide oversight and management of a site's TDM program. A dedicated staff person will serve as the contact person for residents and can help with trip planning, accessing transportation benefits, and general program management and oversight; the coordinator would also work directly with the Mountain View TMA and City to act as a representative for residents transportation needs.

Support / Promote Safe Routes to Schools

The transportation concierge staff will include Safe Routes to School information in the residential marketing materials and on their websites. The transportation concierge will coordinate with the City of Mountain View and Mountain View Whisman School District to obtain information on the Safe Routes to School programs available to future residents of Middlefield Park. The transportation concierge will also support the City of Mountain View and Mountain View Whisman School District by encouraging participation in walking, school bus, and/or bike train efforts. José Antonio Vargas elementary school is the closest school to Middlefield Park.

Provide Monetary Incentives for Alternative Modes

Clipper Cards are the Bay Area's transit fare payment card. Providing Clipper Cards upon move-in with a monthly transit subsidy increases residents' awareness of nearby transit options and reduces barriers to trying transit for regular trips. The overall impact of a transit pass program in supporting transit ridership and affordability is dependent on the level of financial subsidy. Residents in Middlefield Park may receive a monthly transit subsidy as either Clipper E-Cash or the VTA SmartPass to maximize the transit options available to meet their travel needs.

Unbundled Residential Parking

Reduced parking supply is closely related to unbundled parking. With fewer residents owning a car, a variety of land uses that provide entertainment, retail, and daily services, and a transportation environment that makes it easy to get around without a car, there will be fewer vehicle trips made by residents. Unbundled parking separates the cost of a residential parking space from the rental or purchase price of a unit. This program reduces monthly parking costs for households that do not wish to own and park a vehicle. Residential parking (for all units) will be unbundled, and residents will be allowed to pay for no more than one space per unit.

Scooter-share Program

Bike and scooter-share increase the options for longer connections between modes. Currently, there is no dock-based bike-share within the City of Mountain View. Dockless shared mobility models are constantly changing; through partnerships, space can be set aside on-site for bike and scooter-share vendors, however, an agreement would need to be established to ensure the shared vehicles are available for residents to use throughout the day.

4. Monitoring and Enforcements

Office TDM Monitoring

Google recognizes the importance of understanding their worker's travel behavior in order to provide the transportation services needed to ease their daily commutes. Google already surveys employees at all existing campuses in the Bay Area, including North Bayshore and East Whisman, to monitor TDM performance. They will expand the surveys to include the workers in Middlefield Park. These surveys are used to develop and refine TDM programs that will reduce single occupant vehicle trips which reduce congestion on the transportation network. While there are no specific SOV targets for East Whisman, Google will provide mode split data from the survey results to the City of Mountain View to help in the City's evaluation of gateways to the planning area.

The effectiveness of the Office TDM plan will be monitored on an annual basis to determine if the project is meeting the AM and PM peak hour trip caps. The City can impose penalties for non-compliance with the trip caps and require the implementation of additional TDM measures if non-compliance continues. Some of the alternative requirement measures identified by the City include implementation of parking fees, increased transit subsidies, or imposing more aggressive TDM policies. When the Middlefield Park TDM plan was prepared, the City had not formally adopted a set of TDM guidelines for the EWPP area.

While the City of Mountain view has not yet adopted a methodology for driveway trip cap monitoring within the EWPP area, the North Bayshore TDM Guidelines recommended the following approach for annual driveway monitoring:

- Counts shall be conducted by a third party
- Counts shall be taken over a 24-hour period over at least three days during a typical week (e.g., school is in-session, and dry weather)
- A morning peak-hour trip count shall then be taken from the data
- Vehicle counts shall be taken at all entry points to the property

Additionally, parking intrusion monitoring of the local neighborhood streets will be conducted annually. Parking intrusion monitoring should be conducted on neighborhood streets within a three-block radius of Middlefield Park that allow unrestricted on-street parking. Parking intrusion monitoring efforts will estimate to what capacity Middlefield Park contributes to on-street parking demand. Baseline parking occupancy counts should be taken prior to occupation of Middlefield Park to define what level of on-street parking exists that is not associated with Middlefield Park. This baseline may be redefined as other projects within the EWPP area that could occupy on-street parking are constructed. Specific monitoring locations, methods, and thresholds may be modified based on observed condition or new technologies.

Ultimately, Google looks forward to working with the City of Mountain View to establish a TDM monitoring program that includes driveway monitoring and reporting for Middlefield Park.

Residential TDM Monitoring

As stated earlier, the EWPP does not include a specific numeric trip reduction goal for the Residential TDM program; however, it does reference that the trip-reduction should be consistent with the Greenhouse Gas Reduction Program or other City trip-reduction standard. Currently, the Greenhouse Gas Reduction Program identified as employment trip reduction goal for the EWPP area of a 9% reduction in trips as compared to Institute of Transportation Engineers (ITE) trip rates. When the developers prepare a project specific residential TDM plan, they will coordinate with the City to determine an appropriate methodology to test for conformance with the trip reduction goal. If there is non-conformance with the trip reduction goal there will be no penalties; however, the property managers or homeowner's association will need to revise the TDM plan to add new programs or policies to meet the trip reduction goal.

The EWPP also requires annual monitoring of the residential parking areas to determine the parking demand and resulting parking demand rate per unit. This annual monitoring will be conducted by a third party, paid for by the property owners or representatives.

Additionally, parking intrusion monitoring of the local neighborhood streets will be conducted annually. Parking intrusion monitoring should be conducted on neighborhood streets within a three-block radius of Middlefield Park that allow unrestricted on-street parking. Parking intrusion monitoring efforts will estimate to what capacity Middlefield Park contributes to on-street parking demand. Baseline parking occupancy counts should be taken prior to occupation of Middlefield Park to define what level of on-street parking exists that is not associated with Middlefield Park. This baseline may be redefined as other projects within the EWPP area that could occupy on-street parking are constructed. Specific monitoring locations, methods, and thresholds may be modified based on observed condition or new technologies.

The residential developer(s) will work with the City to identify an appropriate monitoring methodology and practices for the residential TDM program and will provide the data in an annual monitoring report.