

Appendix C
Transportation Impact Report



Transportation Impact Report

Del Monte Forest, Inclusionary Housing Project

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Transportation Impact Report Del Monte Forest, Inclusionary Housing Project

Prepared for:
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Table of Contents

EXECUTIVE SUMMARY.....	I
Framework for Analysis	i
Key Project Characteristics	i
Trip Generation & Assignment.....	i
Impacts and Recommendations	i
1.0 POLICY AND REGULATORY SETTING	1
1.1 State	1
1.1.1 California Environmental Quality Act (CEQA).....	1
1.1.2 Caltrans Guide for the Preparation of Traffic Impact Studies (2002).....	1
1.1.3 Caltrans Transportation Concept Report.....	1
1.2 Regional.....	2
1.2.1 2014 Monterey County Regional Transportation Plan.....	2
1.2.2 Regional Development Impact Fee Program Nexus Study (Update 2013).....	2
1.2.3 Regional Transportation Improvement Program.....	3
1.3 County of Monterey.....	4
1.3.1 2010 Monterey County General Plan (Inland Area).....	4
1.3.2 1982 Monterey County General Plan (Coastal Zone).....	4
1.3.3 Monterey County Trip Reduction Requirements.....	5
1.3.4 Monterey County Code Parking Requirements.....	6
1.3.5 Monterey County Local Coastal Program: Del Monte Forest Land Use Plan (2012).....	6
1.4 Local Transportation Plans, Agreements, and Regulations.....	7
1.4.1 Del Monte Forest Area Land Use Plan Agreement (July 24, 1984).....	8
1.4.2 17-Mile Drive Public Use Agreement (October 20, 1987).....	8
1.4.3 Del Monte Forest Transportation Policy Agreement (October 20, 1987).....	8
1.4.4 Del Monte Forest Architectural Board Design Guidelines	9
1.5 City of Pacific Grove.....	9
1.5.1 City of Pacific Grove General Plan	9
1.6 Significance Criteria.....	9

1.6.1	Traffic Increases.....	9
1.6.2	Del Monte Forest Gates.....	10
1.6.3	Access and Circulation.....	10
1.6.4	Parking.....	10
1.6.5	Transit, Bicycles and Pedestrians.....	10
1.6.6	Construction Traffic.....	10
2.0	AUTO TRAFFIC SETTING.....	11
2.1	Introduction.....	11
2.2	Traffic Impact Analysis Area.....	11
2.3	Study Scenarios.....	13
2.4	Analysis Locations.....	13
2.5	Traffic Forecasts.....	16
2.5.1	Level of Service Methodology.....	17
2.6	Roadway Assumptions.....	20
2.7	baseline Conditions.....	20
2.7.1	Intersections.....	20
2.7.2	Signal Warrants.....	21
2.7.3	Forest Gates.....	21
3.0	PROJECT TRAFFIC CHARACTERISTICS.....	24
3.1	Trip Generation.....	24
3.2	Project Trip Distribution and Assignment.....	25
3.3	Project road improvements.....	25
4.0	AUTO TRAFFIC IMPACTS.....	27
4.1	Impacts and Mitigation Measures – Existing Plus Project.....	27
4.1.1	Study Intersections.....	27
4.1.2	Forest Gates.....	27
4.2	Impacts and Mitigation Measures – Near Term Plus Project.....	28
4.2.1	Study Intersections.....	28
4.2.2	Forest Gates.....	28
4.3	Impacts and Mitigation Measures – Cumulative Plus Project.....	28
4.3.1	Study Intersections.....	28

4.3.2	Forest Gates	29
4.4	Fair Share	29
5.0	TRANSIT	35
5.1	MST Transit.....	35
5.1.1	Routes	35
5.1.2	Emergency Guaranteed Ride Home (EGRH).....	35
5.1.3	Short-Range MST Transit Plan	36
5.2	Pebble Beach Company Shuttles.....	36
6.0	BICYCLE AND PEDESTRIANS.....	37
7.0	PARKING	38
8.0	SITE CIRCULATION.....	39
8.1	Vehicular Access and Circulation.....	39
8.1.1	Site Distance and Driveway Assessment.....	39
8.1.2	Emergency Vehicle Access.....	40
8.2	Pedestrian Access.....	40
8.3	Bicycle Access	40
9.0	CONSTRUCTION IMPACTS.....	43

Appendices

Appendix A: Intersection Counts

Appendix B: Intersection Traffic Volumes

Appendix C: Intersection LOS Calculation Worksheets

Appendix D: Peak Hour Signal Warrant Analysis

List of Figures

Figure 2-1 Del Monte Forest and Vicinity.....	12
Figure 2-2 Intersection Control and Lane Configurations	15
Figure 8-1 Site Plan Review.....	41
Figure 8-2 Sight Distance Assessment.....	42
Figure 9-1 Construction Truck Routing	44

List of Tables

Table 2-1 Annual Growth Factors for Study Locations.....	17
Table 2-3 Qualitative Description of Level of Service	18
Table 2-4 Signalized Intersection Level of Service Criteria	18
Table 2-5 Signalized Intersection Level of Service Criteria	19
Table 2-6 Forest Gate Capacity.....	20
Table 2-9 Intersection Peak Hour Level of Service without Project.....	22
Table 2-10 Peak Hour Traffic Signal Warrant Analysis	23
Table 2-11 Forest Gate Peak Hour Volumes and Level of Service.....	23
Table 3-1 Vehicle Trip Generation Calculations	24
Table 3-2 Trip Distribution Patterns.....	26
Table 4-1 AM Intersection Peak Hour Level of Service with project	30
Table 4-2 PM Intersection Peak Hour Level of Service with Project.....	31
Table 4-3 Peak Hour Traffic Signal Warrant Analysis with Project	32
Table 4-4 Forest Gate Peak Hour Volumes and Level of Service with Project.....	32
Table 4-5 Cumulative Project-Related Vehicle Trips Through DMFP EIR Impacted Intersections.....	33
Table 4-6 Cumulative Project-Related Vehicle Trips Through DMFP EIR Impacted Highway Segments and Ramps	34
Table 7-1 Monterey County Parking Code Requirements	38

EXECUTIVE SUMMARY

The purpose of this study was to assess the effects of the Inclusionary Housing Project (Project) on the travel conditions within the Del Monte Forest (Forest) and the surrounding transportation system. The assessment covered the full range of transportation modes including vehicle traffic, transit, bicycles, and pedestrians; as well as parking and site access and circulation. Construction activities were also identified.

FRAMEWORK FOR ANALYSIS

The transportation study considered both the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods for Existing (2014), Near Term (2017), and Cumulative (2030) conditions. Each condition was evaluated without and with the Project. The study elements included:

- Intersection delay and level of service analysis at 2 locations in the Forest and 4 locations in Pacific Grove and along Highway 68.
- Forest gate volume-to-capacity ratio analysis at two of the five gates that provide access to the Forest.

KEY PROJECT CHARACTERISTICS

TRIP GENERATION & ASSIGNMENT

The Project proposes to construct 24 units which is estimated to generate 180 daily trips, 13 AM peak hour trips, and 15 PM peak hour trips. Because the project is likely to house Forest employees and there are commercial and recreational activities within the Forest, it is assumed that 25% of the trips generated would remain within the Forest and the remaining 75% are outside the Forest

IMPACTS AND RECOMMENDATIONS

Impacts resulting from the Project are less than significant at all study intersections and no mitigation measures are required. However, recommendations following the site plan review are summarized below:

- Maintain landscaping along SFB Morse Drive, adjacent to the Project driveways, to avoid sight distance conflicts (shrubs should not be higher than approximately 30 inches and tree canopies should be approximately six feet from the ground).



- The fire department should review the site plan for fire truck and emergency vehicle access.
- Consider providing bicycle storage units and bicycle maps to residents.



1.0 POLICY AND REGULATORY SETTING

1.1 STATE

1.1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The basic goal of CEQA is to develop and maintain a high-quality environment now and in the future. Appendix G of the CEQA Guidelines provides a framework for the analysis of impacts to transportation resources. The criteria by which significant effects are measured for a roadway are established by the agency that has jurisdiction over that roadway. State highways are under the jurisdiction of Caltrans; other roadways are under the local jurisdiction, either city or county, in which they are located.

1.1.2 CALTRANS GUIDE FOR THE PREPARATION OF TRAFFIC IMPACT STUDIES (2002)

According to the California Department of Transportation's (Caltrans') Guide for the Preparation of Traffic Impact Studies (2002), Caltrans endeavors to maintain a target level of service (LOS) at the transition between C and D on state highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the Lead Agency consult with Caltrans to the appropriate target LOS. If an existing state highway facility is operating below the appropriate target LOS, the existing LOS should be maintained. Definitions for LOS A–F for various facility types are provided under "Traffic Level of Service Methodology" later in this section.

1.1.3 CALTRANS TRANSPORTATION CONCEPT REPORT

Caltrans' Transportation Concept Report identifies long-range improvements and establishes the concept (desired) LOS for specific corridor segments. The report identifies long-range improvements needed to bring an existing facility up to expected standards needed to adequately serve 20-year traffic forecasts. Additionally, it identifies the ultimate design concept for conditions beyond the immediate 20-year design period.

1.1.3.1 **Caltrans Transportation Concept Report for State Route 68 in District 5 (California Department of Transportation, 2013)**

The route concept for SR 68 is to maintain a two lane conventional highway. Strategies to achieve the route concept are maintaining existing urbanized areas with signal control and, when appropriate or as part of land use development, consider operational improvements.



1.2 REGIONAL

1.2.1 2014 MONTEREY COUNTY REGIONAL TRANSPORTATION PLAN

The Regional Transportation Plan (RTP) for the Transportation Agency of Monterey County (TAMC) satisfies state and federal requirements to identify transportation projects that can be funded over the next 20 years to serve the county's transportation needs. This 20-year plan addresses all forms of transportation, and includes the priorities and actions embodied in the plans prepared by each of the county's 12 cities and the County of Monterey.

The RTP develops a list of transportation improvements throughout the County that support goals, objectives, and performance measures that are oriented toward achieving a balanced transportation system. The RTP identifies funding challenges created as revenues dedicated to transportation decrease while transportation needs increase.

The RTP also introduces the Regional Development Impact Fee program that applies to development projects throughout the county based on their impact on the regional transportation system.

1.2.2 REGIONAL DEVELOPMENT IMPACT FEE PROGRAM NEXUS STUDY (UPDATE 2013)

This study provides an update of the 2004 Nexus Study for a Regional Development Impact Fee. The report outlines a development fee program for Monterey County. A complete analysis was performed for the update, beginning with the new region-wide model and culminating with the adoption of new development fees. This "2013 Nexus Study" provides the necessary technical and legal basis under CEQA for implementing the updated Regional Development Impact Fee program as mitigation for cumulative impacts to the regional transportation system. It was approved by the TAMC's Board of Directors. The regional fee programs expected revenues are \$130 million (2013 dollars) to fund both (a) the impact of future development on Monterey County roadways and (b) \$820 million of transportation improvement projects and an additional \$10 million in transit improvement projects. The regional fee funding mechanism therefore only represents a portion of the required funding for each of the proposed projects. The share of funding corresponding to existing traffic and out-of county traffic is planned to come from other sources. The \$820 million in transportation improvement projects are to be spread over the following 17 projects:

- State Route 1 – Sand City / Seaside Widening



- State Route 68 – Community Hospital of Monterey Peninsula (CHOMP) Widening
- State Route 1 / State Route 68 Roundabout
- State Route 156 Widening
- Marina – Salinas Corridor Widening
- Del Monte Corridor Improvements
- US Highway 101 – South County Phase 1 (Frontage Roads – Salinas to Chualar)
- State Route 68 Commuter Improvements
- US Highway 101 – South County Phase 2 (Harris Road Interchange)
- US Highway 101 – Gloria Road Interchange, Gonzales
- US Highway 101 – South Soledad Interchange, Soledad
- US Highway 101 – North Soledad Interchange, Soledad
- US Highway 101 – Walnut Avenue Interchange, Greenfield
- US Highway 101 – First Street Interchange (Loop Road Extension), King City
- US Highway 101 Mainline Widening from Airport Blvd. to Boronda Road, Salinas
- G-11 San Juan Road Improvements
- G-12 San Miguel Canyon Road Improvements
- Salinas Road Improvements

1.2.3 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM

The Regional Transportation Improvement Program is a four year program of transportation projects for Monterey County that includes: 1) federally funded transportation projects; and 2) projects nominated for inclusion in the State Transportation Improvement Program. The Regional Transportation Improvement Program is adopted by TAMC and is submitted to Caltrans and the California Transportation Commission by December 15 of every odd year. Projects in the regional program must be consistent with the adopted Regional Transportation Plan to be programmed into the State Transportation Improvement Program.



1.3 COUNTY OF MONTEREY

1.3.1 2010 MONTEREY COUNTY GENERAL PLAN (INLAND AREA)

The Circulation Element of the 2010 Monterey County General Plan (2010 General Plan) provides policy direction for the transportation systems that serve the unincorporated lands of Monterey County and describes how the County intends to serve transportation needs for the next 20 years as its population grows. The 2010 General Plan only applies to inland areas outside the Coastal Zone. According to Policy C-1.1, the acceptable LOS for county roads and intersections will be LOS D, except as follows:

- a. Acceptable level of service for County roads in Community Areas may be reduced below LOS D through the Community Plan process.
- b. County roads operating at LOS D or below at the time of adopting this General Plan shall not be allowed to be degraded further except in Community Areas where a lower LOS may be approved through the Community Plan process.
- c. Area Plans and Land Use Plans may establish an acceptable level of service for County roads other than LOS D. The benefits which justify less than LOS D shall be identified in the Area Plan. Where an Area Plan does not establish a separate LOS, the standard LOS D shall apply."

Policy C-1.8 states that "the County, in consultation with TAMC and Monterey County cities, shall, within 18 months of adoption of the General Plan, develop a County Traffic Impact Fee that addresses impacts of development in cities and unincorporated areas on major County roads. From the time of adoption of the General Plan until the time of adoption of a County Traffic Impact Fee, the County shall impose an ad hoc fee on its applicants based upon a fair share traffic impact fee study." This County Traffic Impact Fee program has not been adopted yet.

1.3.2 1982 MONTEREY COUNTY GENERAL PLAN (COASTAL ZONE)

The applicable general plan in the Coastal Zone is the 1982 General Plan (County of Monterey 1982). Performance of the county's roads and highways is evaluated based on LOS calculations. Six levels of service represent varying roadway conditions, ranging from LOS A (free-flowing) to LOS F (forced flow). The Monterey County Transportation Commission objective established for the 1982 General Plan, for optimum driving conditions, is LOS C or better (County of Monterey 1982). Some of the relevant transportation policies are listed below:



- Policy 37.2.1. Transportation demands of proposed development shall not exceed an acceptable level of service for existing transportation facilities, unless appropriate increases in capacities are provided for.
- Policy 37.2.2. Land uses requiring concentrated commodity movements shall be located with adequate access to necessary transportation facilities. Policy 37.5.1. The design and location of new development shall consider and incorporate provisions for appropriate transportation modes.
- Policy 38.1.4. The County shall encourage transportation alternatives such as bicycles, car pools, transit, and compact vehicles. Policy 38.1.5. Adequate traffic capacity shall be a criterion for development consideration.
- Policy 39.1.2. The cost of new roads shall be borne as equitably as possible among benefiting property owners and/or users.
- Policy 39.1.4. New development shall be located where there is existing road and highway capacity or where adequate road and highway capacity will be provided.
- Policy 39.2.1. All new road and interior circulation systems shall be designed, developed, and maintained according to adopted County standards.
- Policy 39.2.2. The needs of bicyclists, pedestrians, utilities, and drainage shall be considered and, where appropriate, provided for on all public rights-of-way.

1.3.3 MONTEREY COUNTY TRIP REDUCTION REQUIREMENTS

Under special regulations in Title 20 of the Monterey County Zoning Ordinance, any residential development of 25 units or more is subject to Section 20.64.250 (Regulations for Reductions in Vehicle Trips). The purpose of this section is to establish requirements to reduce vehicle trips in certain developments by ensuring that new developments, redevelopment, and expansion of existing developments contain the infrastructure and programs needed to reduce the need to travel and to encourage alternative modes of travel. Developers are required to submit a trip reduction checklist and site development plans with their applications. The checklist and plans must identify the proposed design elements and facilities that encourage alternative transportation usage by residents, employees, and customers of the development.

After reviewing the checklist and plans, the County may require the developer to implement one or more programs as a condition of approval of the development. Examples of programs that may be required include:

- Ridesharing, public transportation, and child care information to tenants/buyers.



- Addition of a bus stop, bike lane, or park-and-ride lot.
- Printed transit schedules and promotional materials.
- Park-and-ride, shuttles, and marketing techniques for special events.
- Bicycle racks, lockers, or paths.
- Bus pullouts, pedestrian access, or transit stops and shelters.
- Pedestrian facilities linking transit stops and common open areas.
- Transportation information centers or kiosks.
- Shuttle bus services, bus pools, or improved transit service.

1.3.4 MONTEREY COUNTY CODE PARKING REQUIREMENTS

Chapter 20.58 (Regulations for Parking) of the Monterey County Code specifies the minimum number of off-street parking spaces required for all land uses in the unincorporated areas of the county. For any land use not specifically listed, the parking requirement will be determined by the County's Director of Planning based on standards established for similar uses.

1.3.5 MONTEREY COUNTY LOCAL COASTAL PROGRAM: DEL MONTE FOREST LAND USE PLAN (2012)

The 2012 amendment to the Del Monte forest LUP included a similar intent in managing circulation within Del Monte Forest as the former LUP. Policies were updated to reflect current conditions and clarified as to intent. The 2012 Del Monte Forest LUP included the following key relevant transportation policies:

Circulation. The continued development of a multi-modal circulation system within the Del Monte Forest shall be encouraged to provide an adequate level of service with minimal intrusion to the Forest environment, ensure adequate and effective public recreational access, encourage separation of visitor and resident traffic, and provide for a proportionate share of the improvements necessary to impacted areas of Highway 68, which serves as an external access route to the Del Monte Forest.

- Policy 69. Transportation improvements shall include consideration of non-automobile facilities, including public transit stops. Expansion of existing commercial facilities or development of new facilities shall be approved only where the requirement for adequate parking can be fully satisfied on and/or off-site. Adequate parking must account for all uses of the facilities (e.g., hotel units, restaurant, employees, day use facilities, etc.), but parking supply/demand may be adjusted when such uses overlap (e.g., hotel guests use multiple aspects of resort facilities (rooms, golf, meeting



space, etc.) and the amount of required parking can be reduced to reflect such overlap, if applicable). [Revised from previous Policy 71]

- Policy 97. Seventeen Mile Drive shall remain open to the public for recreational use and any entrance fee charged shall be limited to a vehicular access fee (i.e., pedestrian and bicycle access shall remain free) and shall remain reasonable. [Revised from Existing Policy 96] Policy 101. Approval of new subdivision and/or hotel development in the Forest shall be based upon professional engineering traffic studies that will identify and provide for circulation changes/improvements necessary to appropriately offset such development's impacts on existing visitor and residential circulation needs. Approval of any such development shall incorporate and/or require as a condition of approval the identified mitigation for circulation changes/improvements. [Revised from previous Policy 99]
- Policy 103. To preserve both visual and physical access to the coast, the impacts on the road system of the Forest and on Highways 68 and 1 resulting from incremental development in the Forest shall be mitigated in conjunction with, or as a function of, new development. [Revised from previous Policy 101]
- Policy 108. Applications for development in the Forest shall include an analysis of the traffic generation of such development and an analysis of the probable routes of such traffic. If the decision making body determines that the additional traffic generated by such development will create the need for additional traffic facilities, including changes and/or enhancements, to account for traffic that will exceed Level of Service D, and without regard to any other traffic generated by other sources, the County shall require the applicant to contribute to the County, at the time of construction, the applicant's estimated proportionate share of the cost of those facilities made necessary to which the development contributes. [Revised from previous Policy 106]
- Policy 110. Improved bicycle access and connectivity within the Del Monte Forest, including a safe and usable through route (off-road preferably) from Pacific Grove to Carmel where space and grades permit, as close as feasible to the sea, is encouraged. Development that affects existing bicycle access (e.g., road improvement projects) shall include enhanced bicycle access improvements if such improvements are feasible. [Revised from previous Policy 108]

1.4 LOCAL TRANSPORTATION PLANS, AGREEMENTS, AND REGULATIONS

Several agreements have been enacted between Pebble Beach Company (henceforth referred to as the "Company") and the Monterey County Board of Supervisors for roads in the Del Monte Forest (Forest). These include the Del Monte Forest Area Land Use Plan Agreement, 17-Mile Drive Public Use Agreement,



and the Del Monte Forest Transportation Policy Agreement. These agreements are briefly summarized below from a transportation perspective.

1.4.1 DEL MONTE FOREST AREA LAND USE PLAN AGREEMENT (JULY 24, 1984)

This agreement acknowledged that the Company owns the Forest road system with supervised gate entrances. The agreement established that the Company retains the Forest road system as a private road system, solely owned and operated by the Company. The agreement further established that the Company must maintain the gate entrances to the road system with 24 hour staffing, and maintain and repair the road system in accordance with the standards attached to the agreement.

1.4.2 17-MILE DRIVE PUBLIC USE AGREEMENT (OCTOBER 20, 1987)

This agreement acknowledged that Forest roads are privately owned and maintained by the Company and are not established, maintained, or held open for public use. The agreement further established the general public's access to the Forest and use of 17-Mile Drive during daylight hours subject to the payment of an entrance fee for vehicles and other appropriate restrictions.

1.4.3 DEL MONTE FOREST TRANSPORTATION POLICY AGREEMENT (OCTOBER 20, 1987)

This agreement set forth the general understanding of the Company and the County with respect to improvement and maintenance of the internal Forest road system, and the financial contribution from new development in the Forest to road improvements outside the Forest. The Transportation Policy is a dynamic policy statement intended to act as a guide and is subject to modification over time, as necessary, upon mutual written concurrence of the Company and the County. The basis for the Transportation Policy was the "Crowell Report." Some improvements specifically addressed included the development of a fifth gate to the Forest (which has been completed); improvements to Highway 68 outside the Forest; and improvements to the Highway 1/Highway 68 interchange.

The general design criteria for the internal roadways include the following standards:

- Stopping sight distance must be 250 feet for the 17-Mile Drive and primary roads;
- Stopping sight distance must be 200 feet for local roadways;
- New roads must have a minimum right-of-way width of 60 feet for the 17-Mile Drive and primary roads, and 50 feet for local roads;
- Right-of-way widths for existing roadways do not need to be expanded; and



- 17-Mile Drive and primary roads must have a minimum pavement width of 24 feet; and local roads must have a minimum width of 20 feet exclusive of shoulders.

1.4.4 DEL MONTE FOREST ARCHITECTURAL BOARD DESIGN GUIDELINES

The Del Monte Forest Architectural Review Board developed a set of design guidelines “to foster careful design and harmony between structures and the surrounding environment and to enhance the overall desirability of living within Del Monte Forest.” The guidelines also include construction regulations (Pebble Beach Company 2002).

1.5 CITY OF PACIFIC GROVE

1.5.1 CITY OF PACIFIC GROVE GENERAL PLAN

Two intersections studied as part of the transportation analysis fall within the jurisdiction of the City of Pacific Grove (Congress Avenue/Forest Lodge Road, Congress Avenue/David Avenue). Goal 2, Policy 2 of the Pacific Grove General Plan (City of Pacific Grove 1994) states that the City of Pacific Grove will “strive to maintain a level of service no worse than C during peak periods on arterials and collector streets within the city.”

1.6 SIGNIFICANCE CRITERIA

1.6.1 TRAFFIC INCREASES

Study intersections and study highway segments are located in several jurisdictions including Monterey County, and the cities of Pacific Grove, Monterey, and Carmel. In addition, Highway 1, Highway 68, Highway 156, and US 101 are under Caltrans jurisdiction.

Transportation facilities in the Monterey County Coastal Zone are expected to operate at LOS C or better (1982 General Plan). Outside the Coastal Zone, Monterey County accepts LOS D (2010 General Plan). Caltrans has a statewide objective to maintain a target LOS at the transition between LOS C and LOS D on state highways (Guide for The Preparation of Traffic Impact Studies, December 2002). The Pacific Grove General Plan (Transportation, Chapter 4, Goal 2, Policy 2) states, in part, “Strive to maintain a level of service no worse than C during peak periods on arterials and collector streets within the city.” Therefore, this study will take the conservative approach and assume that LOS C represents the lowest acceptable threshold for traffic operations at study intersections and highway segments, except for highway segments outside the Coastal Zone, where LOS D shall be the lowest acceptable threshold.



1.6.1.1 Signalized Intersections

- A significant traffic impact would occur if an intersection operating at LOS A, B, or C, degrades to D, E, or F (outside the Coastal Zone it would be if an intersection degrades to E or F).
- For intersections already operating at an unacceptable LOS D and E (only LOS E if outside the Coastal Zone), a significant impact would occur if a project adds 0.01 to the critical movement volume-to-capacity ratio.
- For intersections already operating at an unacceptable LOS F, a significant impact would occur if a project adds one or more cars to the critical movement volume-to-capacity ratio.

1.6.1.2 Unsignalized Intersections

- A significant impact would occur if any traffic movement has LOS F or any traffic signal warrant is met.

1.6.2 DEL MONTE FOREST GATES

Cause an increase in traffic resulting in a volume-to-capacity (v/c) ratio of 0.90 or greater for the Del Monte Forest Gates.

1.6.3 ACCESS AND CIRCULATION

Create new roadways that do not meet the design criteria established in the Del Monte Forest Transportation Policy Agreement (October 20, 1987) or substantially increase hazards due to design of roadways or internal circulation patterns or result in inadequate emergency access.

1.6.4 PARKING

Result in inadequate parking.

1.6.5 TRANSIT, BICYCLES AND PEDESTRIANS

Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) and trails as they intersect with roads.

1.6.6 CONSTRUCTION TRAFFIC

Cause short-term increases in traffic on roads or intersections causing existing levels of service to drop to unacceptable levels or aggravating the operation of intersections previously identified as deficient.



2.0 AUTO TRAFFIC SETTING

2.1 INTRODUCTION

The purpose of this study is to evaluate the transportation impacts resulting from the Pebble Beach Company's proposed Inclusionary Housing Project (henceforth referred to as the Project) intended to comply with a condition of approval for the Del Monte Forest Plan. The Project consists of 24 new affordable apartment units on a 9.19 acre site.

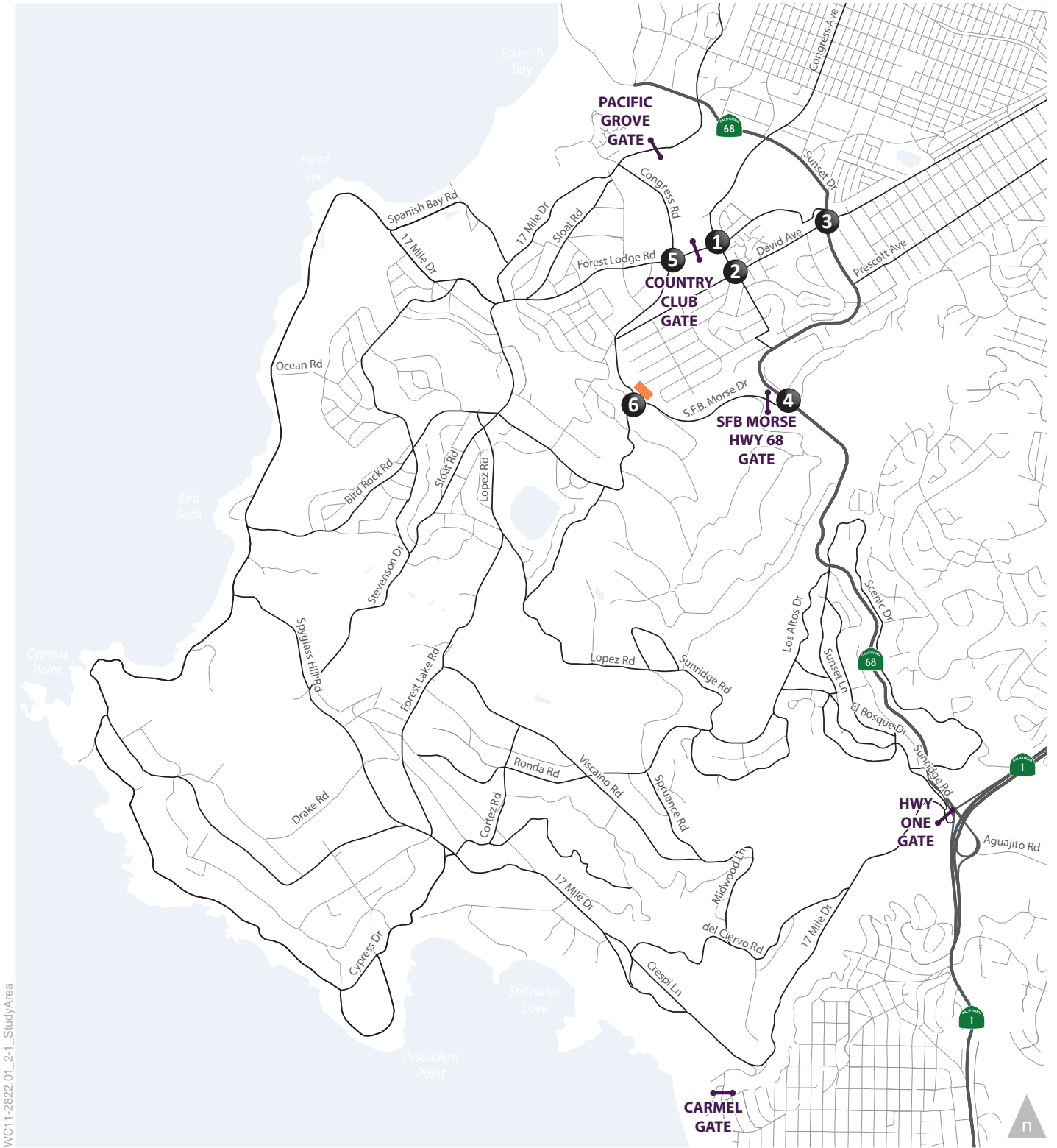
Fehr & Peers conducted a transportation and circulation analysis to identify Project impacts. The study area included the Del Monte Forest (henceforth referred to as the "Forest") and areas outside the Forest that could experience traffic impacts associated with the Project. The existing roadway network in the immediate area is presented in **Figure 2-1**.

2.2 TRAFFIC IMPACT ANALYSIS AREA

The roadway network in the Project vicinity consists of one regional roadway, Highway 68. Highway 68 is a two- or four-lane roadway connecting Pacific Grove and Salinas. West of Highway 1, the highway is referred to as "W. R. Holman Highway". East of Highway 1 it is referred to as the "Monterey-Salinas Highway". For purpose of this study, Highway 68 refers to the Holman Highway segment between Pacific Grove and Highway 1.

Five gates in various locations provide access to the Forest. The Pacific Grove Gate and Country Club Gate provide access between Pebble Beach and the City of Pacific Grove. The SFB Morse Gate provides direct access to Highway 68. The Highway 1 Gate allows direct access to Highway 1 and Highway 68. Lastly, the Carmel Gate is located north of the Ocean Avenue/San Antonio Avenue intersection in Carmel. The Country Club and SFB Morse gates are the closest gates to the Project, and are included in this study.





WC11-2822.01_2-1_StudyArea

LEGEND

- # Study Intersection
- Project Site



Figure 2-1

Del Monte Forest and Vicinity

2.3 STUDY SCENARIOS

The analysis for the development proposal examines six scenarios:

- 1) **Existing Conditions** are based on intersection traffic counts collected in October 2014.
- 2) **Existing plus Project Conditions** includes the analysis of existing traffic plus traffic associated with buildout of the Project.
- 3) **Near Term “Year 2017” Conditions** are based on a linear projection of traffic between existing conditions and cumulative conditions. This scenario analyzes the likely traffic conditions at the time of Project development, and includes some Del Monte Forest Plan development expected to be completed by December 2017.
- 4) **Near Term plus Project Conditions** includes the analysis of near term traffic plus traffic associated with buildout of the Project.
- 5) **Cumulative “Year 2030” Conditions** are based on an annual growth rate derived from the Association of Monterey Bay Area Governments (AMBAG) travel demand model consistent with anticipated local land use growth. The annual growth rate was applied to the existing traffic data to forecast traffic in 2030 and then estimated Del Monte Forest Plan traffic (*Del Monte Forest EIR, 2012*) project trips were added to result in Cumulative “Year 2030” volumes. .
- 6) **Cumulative plus Project Conditions** is 2030 conditions plus the trips generated by the Project.

Each scenario is evaluated for the weekday morning peak hour assumed to occur between 7:00 and 9:00 AM and the evening peak hour assumed to occur between 4:00 and 6:00 PM.

2.4 ANALYSIS LOCATIONS

The roadway analysis evaluated intersections and Forest gates.

Intersection delay and level of service analysis was conducted at six locations in and near the Forest. Each location is listed below and existing lane configurations and traffic volumes are presented in **Appendix B**.

- Congress Avenue / Forest Lodge Road
- Congress Avenue / David Avenue
- Forest Avenue (Highway 68) / David Avenue
- Highway 68 / SFB Morse Gate
- Forest Lodge Road / Congress Road



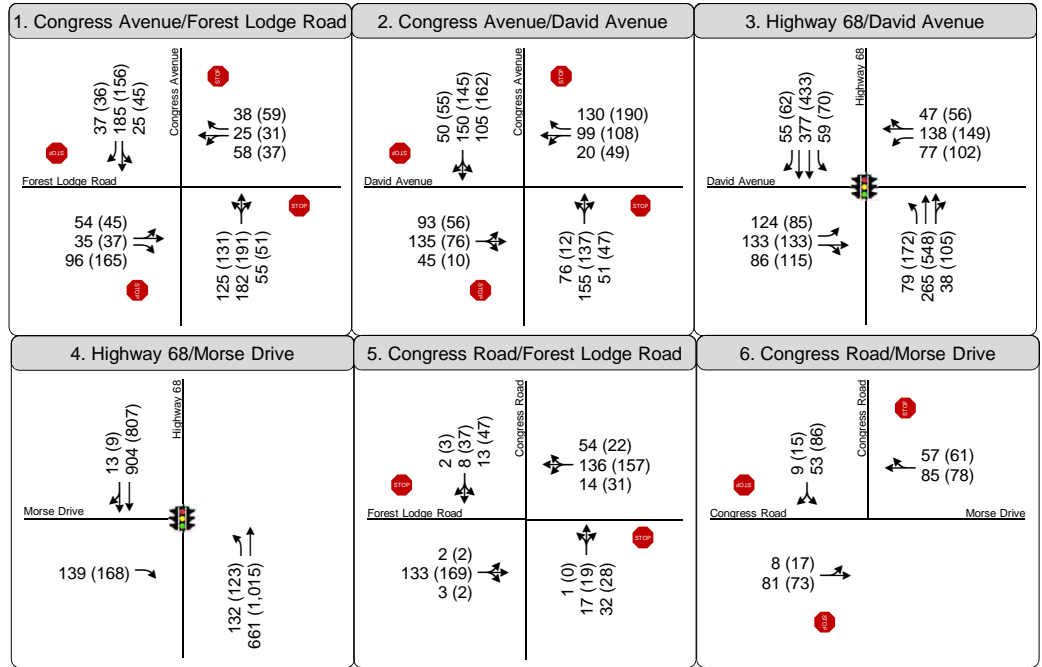
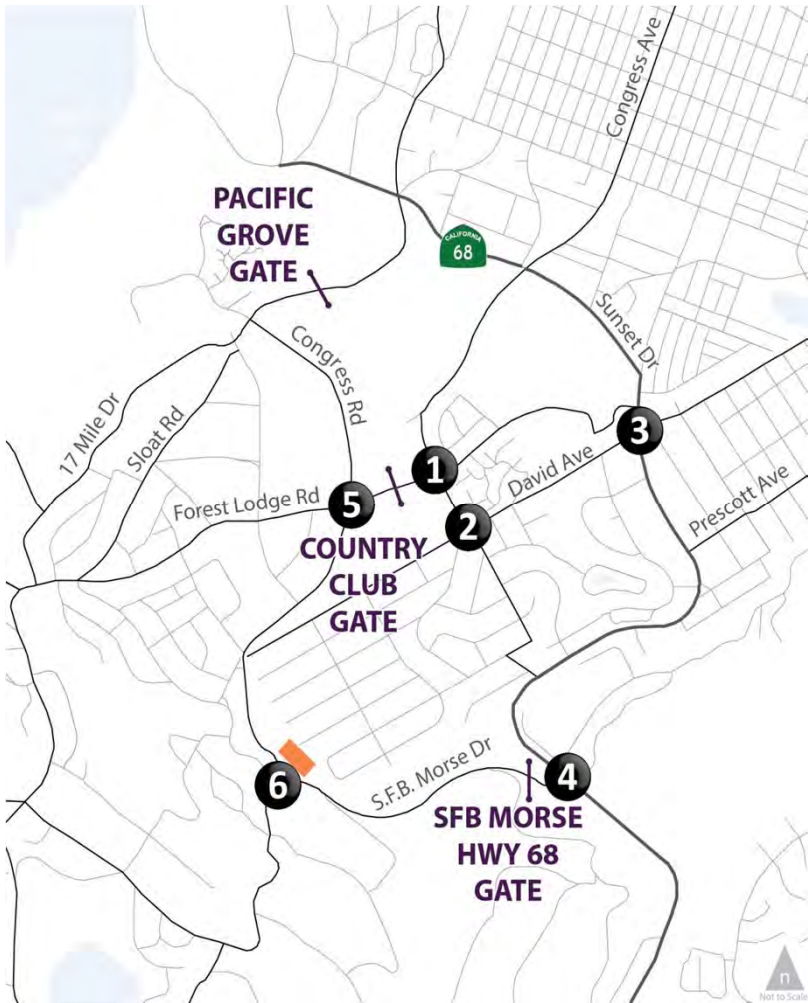
- SFB Morse Drive / Congress Road

Forest Gates are evaluated in this study with a volume-to-capacity ratio. These gates provide access for residents, visitors, and employees to the Forest. The traffic conditions and level of service are evaluated at each gate listed below.

- Country Club Gate
- SFB Morse Gate

Study intersections and forest gates presented in **Figure 2-2**.





LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure 2-2
Peak Hour Traffic Volumes and Lane Configurations
Existing (2014) Conditions



2.5 TRAFFIC FORECASTS

This study analyzes two future year scenarios without and with the Project. One future year scenario addresses anticipated conditions with existing traffic increased by an annual growth rate to Year 2017 and some Del Monte Forest Plan development expected to be completed by December 2017 (henceforth referred to as "Near Term Conditions"). The second future year scenario addresses conditions in the year 2030 by applying an annual growth rate to existing traffic and adding all Del Monte Forest Plan project trips (henceforth referred to as "Cumulative Conditions"). Del Monte Forest plan projects accounted in the Near Term scenario are summarized below. Remaining projects documented in the Del Monte Forest Plan EIR, 2012, are accounted for in Cumulative Conditions.

Del Monte Forest Plan, Near Term Projects (To be completed by December 2017):

- Subdivision Lot F2
- Subdivision Lot I2
- Lodge Conference Center
- Lodge Parking Improvements
- Fairway One/Beirne Project
- Subdivision J
- Subdivision K
- Subdivision L
- Spanish Bay Parking Lot
- Pebble Beach Driving Range Relocation
- Event Field

To determine the annual growth rate, the Association of Monterey Bay Area Governments (AMABG) Regional Travel Demand Model was reviewed. The model assumes a base year of 2010 and future year of 2035. Land use forecasts in the model were reviewed and showed little to no changes in the Project area, consistent with local agencies expected future growth. The resulting annual growth factors used at each of the study intersections is summarized in **Table 2-1**.

The average growth rate, 0.65% and 0.67% for the AM and PM peak hours, respectively, were used for this study.



**TABLE 2-1
ANNUAL GROWTH FACTORS FOR STUDY LOCATIONS**

Study Locations	Annual Growth Factor (Used to derive 2017 and 2030 traffic forecasts)	
	AM Peak Hour	PM Peak Hour
Intersections located in the Forest, Pacific Grove, and along Highway 68 to the Highway 1 interchange	0.54%	0.66%
Highway 1, between Carmel and Monterey	0.75%	0.69%
Average	0.65%	0.67%

Source: Fehr & Peers (December 2014)

2.5.1 LEVEL OF SERVICE METHODOLOGY

To measure and describe operational status of a local roadway network, transportation engineers and planners utilize the term Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of traffic from the auto driver's perspective. LOS varies from LOS A, indicating free flow traffic conditions with little or no delay; to LOS F, representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays. The LOS grading system is applied to signalized and unsignalized intersection analysis as well as highway segment analysis. **Table 2-3** describes level of service grades.

Signalized Intersection traffic conditions and level of service are determined using the 2000 *Highway Capacity Manual* (Transportation Research Board, 2000) methodology using the Synchro Version 8 software. This operations analysis uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the control delay per vehicle. Control delay is the portion of the total delay attributed to signal operations and includes initial deceleration, queue move up time, stopped delay, and acceleration delay. Using this methodology, the level of service for a signalized intersection is based on the control delay per vehicle measured in seconds. The signalized intersection LOS criteria are summarized in **Table 2-4**.



**TABLE 2-3
QUALITATIVE DESCRIPTION OF LEVEL OF SERVICE**

Level of Service	Driver's Perception
A	LOS A is the highest quality of traffic flow. Motorists are able to drive at their desired speeds for two and four lane roads and can easily make lane changes to pass on four lane roads. At a traffic signal, all motorists can be served by one green signal phase.
B	LOS B is characterized by light congestion. Motorists are generally able to maintain desired speeds on two and four lane roads and make lane changes on four lane roads. Motorists are still able to pass through traffic controlled intersections in one green phase.
C	LOS C represents moderate traffic congestion. Average vehicle speeds continue to be near the motorist's desired speed for two and four lane roads. Lane change maneuvers on four lane roads increase to maintain desired speed. Turning traffic and slow vehicles begin to have an adverse impact on traffic flows. Occasionally, motorists do not clear the intersection on the first green phase.
D	LOS D is characterized by congestion with average vehicle speeds decreasing below the motorist's desired level for two and four lane roads. Lane change maneuvers on four lane roads are difficult to make and adversely affect traffic flow like turning traffic and slow vehicles. Multiple cars must wait through more than one green phase at a traffic signal.
E	LOS E is the lowest grade possible without stop-and-go operations. Driving speeds are substantially reduced and brief periods of stop-and-go conditions can occur on two and four lane roads and lane changes are minimal. At signalized intersections, long vehicle queues can form waiting to be served by the signal's green phase.
F	LOS F represents stop-and-go conditions for two and four lane roads. Traffic flow is constrained and lane changes minimal. Drivers at signalized intersections may wait several green phases prior to being served.

Source: Fehr & Peers (interpreted from 2000 *Highway Capacity Manual*)

**TABLE 2-4
SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

Level of Service	Control Delay per Vehicle (Seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Source: *Highway Capacity Manual* – Special Report 209 (Transportation Research Board, 2000)



Unsignalized Intersections (four-way stop-controlled and side-street stop-controlled) are evaluated using the *2000 Highway Capacity Manual* (Transportation Research Board, 2000) methodology using the Synchro Version 8 software. Operations are defined by average control delay per vehicle (measured in seconds) for each movement that must yield right-of-way. This incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. At two-way or side street-controlled intersections, control delay (and LOS) is calculated for each controlled movement, the left-turn movement from the major street, and the entire intersection. The delays for the entire intersection and the movement or approach with the highest delay are reported. **Table 2-5** shows the relationship between delay and LOS for unsignalized intersections.

**TABLE 2-5
SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

Level of Service	Control Delay per Vehicle (Seconds)
A/B	≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

Source: *Highway Capacity Manual – Special Report 209* (Transportation Research Board, 2000)

Forest Gates provide public access to the Forest. Visitors to the Forest must stop at one of the five gates and pay a gate entrance fee. Residents and employees within the Forest do not pay an entrance fee (residents pay an annual fee for road maintenance), but must provide visible identification to the security guard, either with a pass or emblem on their vehicle.

Gate capacity is thus a function of the visitor/resident ratio. Most gates have separate visitor and resident lanes. The SFB Morse Gate has one visitor and one resident entry lane. The Country Club Gate has only one entry lane, but few visitors ever use this gate.

Previous studies indicate that average entry time for residents is about 6 seconds, and 30 seconds for visitors. So, a lane serving all residents could service 600 vehicles per hour, while a lane serving all visitors could service 120 vehicles per hour. As shown in **Table 2-6**, the percentage of visitors entering the SFB Morse and Country Club gates ranges from 0 to over 5 percent of the afternoon peak hour volume at the gate. The per lane capacities, also shown in **Table 2-6**, represent the maximum flow through the gates. Comparing the volume-to-capacity ratio indicates whether a particular gate will operate at an



unacceptable level. For purposes of this study, a volume-to-capacity ratio of 0.90 or greater is considered unacceptable.

**TABLE 2-6
FOREST GATE CAPACITY**

Gate	Percent Paid Visitor ¹	Calculated Hourly Capacity Per Lane	Number of Lanes	Total Gate Capacity per hour
Country Club Gate	0%	600	1	600
SFB Morse Gate	5%	520	1	520

Notes: Percent paid visitor data obtained from previous environmental documents. Source: Fehr & Peers (December 2014)

2.6 ROADWAY ASSUMPTIONS

There are no roadway improvements assumed in the near term or cumulative scenarios in the Project study area that would directly impact one of the study intersections or the project's access.

2.7 BASELINE CONDITIONS

This section is divided into three sub-sections discussing the study intersections, signal warrants, and the forest gates.

2.7.1 INTERSECTIONS

Intersection turning movement data was collected in October 2014 for the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. **Appendix A** contains the intersection counts collected for this study. The traffic volumes used in this analysis generally represent the morning peak hour (7:30 to 8:30 AM) and evening peak hour (4:30 to 5:30 PM). **Appendix B** contains the existing intersection traffic volumes used in this study, as well as the 2017 and 2030 traffic forecasts used in this study.

Table 2-9 lists all study intersections analyzed, including the Forest intersections, and shows existing intersection delay and level of service as well as the 2017 and 2030 operations. Level of service describes traffic conditions experienced by drivers traveling through the intersection. **Appendix C** contains the intersection level of service calculation sheets.



All analyzed intersections operate at the County's threshold of LOS C or better during the existing weekday morning and evening peak hours.

2.7.2 SIGNAL WARRANTS

All-way stop and side-street stop controlled intersections were evaluated for Warrant 3, peak hour volume warrant, published by the Federal Highway Administration in the *Manual on Uniform Traffic Control Devices 2012* (MUTCD). The peak hour volume warrant is applied where traffic conditions are such that for one (1) hour of the day, minor street traffic suffers undue delay in entering or crossing a major street. **Table 2-10** summarizes the results from the peak hour signal warrant analysis and **Appendix D** contains the Warrant worksheets. No study intersections met the signal warrant under existing, 2017, or 2030 conditions, with or without the Project.

2.7.3 FOREST GATES

Traffic data was collected in October 2014 for the SFB Morse and Country Club gates. LOS results are shown in **Table 2-11**. The existing traffic conditions for the gates were determined using individual gate capacities (explained in detail under Level of Service Methodology). **Table 2-11** presents the traffic conditions experienced by inbound traffic flow, which is monitored by Forest security, and includes existing, 2017 and 2030 conditions. All gates under either existing, 2017, or 2030 conditions with or without the Project operate at acceptable levels.



**TABLE 2-9
INTERSECTION PEAK HOUR LEVEL OF SERVICE WITHOUT PROJECT**

Description		Intersection Delay and Level of Service					
		Existing Year 2014 LOS		Near Term Year 2017 LOS		Cumulative Year 2030 LOS	
		AM	PM	AM	PM	AM	PM
Signalized Intersections¹							
3	Forest Ave. (Highway 68)/David Ave.	24 / C	29 / C	24 / C	30 / C	25 / C	34 / C
4	Highway 68 / SFB Morse Gate	3 / A	4 / A	4 / A	4 / A	4 / A	4 / A
All-Way Stop Intersections²							
1	Congress Ave. / Forest Lodge Rd.	14 / B	11 / B	14 / B	12 / B	12 / B	12 / B
2	Congress Ave. / David Ave.	17 / C	11 / B	18 / C	11 / B	16 / C	13 / B
6	Congress Road / SFB Morse Drive	8 / A	8 / A	8 / A	8 / A	8 / A	8 / A
Side-Street Stop Intersections³							
5	Congress Road / Forest Lodge	2 (12) / A (B)	4 (16) / A (C)	2 (12) / A (B)	5 (17) / A (C)	3 (12) / A (B)	4 (16) / A (C)

Notes:

- 1 Signalized intersection level of service based on control delay per vehicle, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 2 All-way stop intersection level of service based on average intersection delay, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 3 Side street stop controlled intersection level of service based on average control delay for critical side street movement, according to the 2000 *Highway Capacity Manual*, Transportation Research Board, 2000.

Source: Fehr & Peers (December 2014)



**TABLE 2-10
PEAK HOUR TRAFFIC SIGNAL WARRANT ANALYSIS**

	Description	Peak Hour	Existing Year 2014	Near Term Year 2017	Cumulative Year 2030
1	Congress Avenue / Forest Lodge Road	AM(PM)	No(No)	No(No)	No(No)
2	Congress Avenue / David Avenue	AM(PM)	No(No)	No(No)	No(No)
5	Congress Road / Forest Lodge	AM(PM)	No(No)	No(No)	No(No)
6	Congress Road / SFB Morse Drive	AM(PM)	No(No)	No(No)	No(No)

Yes – The intersection meets the peak hour traffic signal warrant
No – The intersection does not meet the peak hour traffic signal warrant
Source: Fehr & Peers (December 2014)

**TABLE 2-11
FOREST GATE PEAK HOUR VOLUMES AND LEVEL OF SERVICE**

Description	Capacity	Peak Hour	Peak Hour Volume (Volume-to-Capacity Ratio) ¹		
			Existing Year 2014 ²	Near Term Year 2017	Cumulative Year 2030
SFB Morse	520	AM	145 (0.28)	150 (0.29)	170 (0.33)
		PM	133 (0.26)	141 (0.27)	156 (0.30)
Country Club Gate	600	AM	200 (0.33)	206 (0.34)	226 (0.38)
		PM	196 (0.33)	207 (0.35)	228 (0.38)

Note:
1 Volume-to-capacity ratio describes the inbound peak hour traffic flow as it relates to gate capacity. A ratio less than 0.90 is considered acceptable.
Source: Fehr & Peers (December 2014)



3.0 PROJECT TRAFFIC CHARACTERISTICS

This chapter defines the Project traffic characteristics including trip generation, trip distribution, and trip assignment. The last section describes the road improvements to be constructed with the Project.

3.1 TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created on a daily basis and for the peak one-hour during the morning and evening commute periods. The Project trip generation was estimated using rates from the Institute of Transportation Engineers Trip Generation (9th Edition). Because of its unique geographic location, trip generation rates for different apartment land uses were compared; of those, the most conservative rates were used. Low rise residential condo/townhouse (231) and residential planned unit development (270) were used for the weekday peak hour and daily rates, respectively. The resulting trip generation estimates are summarized in **Table 3-1**.

**TABLE 3-1
VEHICLE TRIP GENERATION CALCULATIONS**

Inclusionary Housing (24 Units)	Weekday Daily Total ¹	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total ²	In	Out	Total ²	In	Out
Vehicle trip generation rate (per unit)	7.5	0.54	18%	82%	0.64	55%	45%
Vehicle Trips	180	13	2	11	15	8	7

Notes

- 1 Vehicle trip generation rates obtained from Land Use Code 270 in *Trip Generation* 9th Edition published by the Institute of Transportation Engineers.
- 2 Vehicle trip generation rates obtained from Land Use Code 231 in *Trip Generation* 9th Edition published by the Institute of Transportation Engineers

Source: Fehr & Peers.

The project will construct 24 inclusionary housing units with parking. Based on the ITE Trip General Manual, the project is anticipated to generate 13 AM peak hour trips, 15 PM peak hour trips, and 180 daily trips.



As a result of the multiple existing land uses within the Forest and the likelihood that project residents will work in the Forest, there is a significant level of internalization (i.e., the number of trips that have both an origin and destination within the Forest). These trips utilize the Forest road system but do not utilize either the Forest gates or roads external to the Forest. The most recent AMBAG Travel Demand Model was used to determine that 25 percent of the DMFP traffic would have both an origin and destination within the Forest, thereby impacting roads within the Forest but not outside the Forest.

3.2 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution is based the AMBAG Travel Demand Model. The model was used to identify the travel patterns between the Forest and other areas in Monterey County. As discussed previously, 25 percent of the generated traffic was assumed to have an origin and destination within the Forest. The remaining 75 percent of the traffic was distributed per the distribution pattern shown in **Table 3-2**. The distribution of traffic to the Forest Gates is dependent on the time period and the direction of travel. Generally, over the day traffic is distributed to the gates as follows:

- 50% to Country Club Gate
- 25% to SFB Morse Gate
- 25% to the remaining three gates

3.3 PROJECT ROAD IMPROVEMENTS

The Project does not incorporate any roadway or intersection improvements; however, it will construct two new driveways on SFB Morse Drive for access to the site.



**TABLE 3-2
TRIP DISTRIBUTION PATTERNS**

Origin/Destination	Trip Distribution
17-Mile Drive	10%
Forest Avenue	10%
David Avenue	10%
Prescott Avenue	4%
West Monterey	6%
Seaside	5%
Marina	5%
Salinas	5%
East Monterey	6%
Downtown Carmel	12%
Carmel Valley Road	2%
Del Monte Forest	25%
	100%

Source: Fehr & Peers (December 2014)



4.0 AUTO TRAFFIC IMPACTS

This chapter addresses the auto traffic impacts at the study intersections and Forest gates. The analysis results are summarized in the following tables which are contained at the end of this chapter.

- Table 4-1 AM Peak Hour Intersection Level of Service with Project
- Table 4-2 PM Peak Hour Intersection Level of Service with Project
- Table 4-3 AM and PM Peak Hour Traffic Signal Warrant Analysis with Project
- Table 4-4 Forest Gate AM and PM Peak Hour volumes and Level of Service with Project
- Table 4-5 Cumulative Project-Related Vehicle Trips Through DMFP EIR Impacted Intersections
- Table 4-6 Cumulative Project-Related Vehicle Trips Through DMFP EIR Impacted Highway Segments and Ramps

The intersection turning movement data for each study scenario is provided in **Appendix B** while the intersection analysis worksheets are provided in **Appendix C**. The peak hour traffic signal warrant worksheets are provided in **Appendix D**.

4.1 IMPACTS AND MITIGATION MEASURES – EXISTING PLUS PROJECT

4.1.1 STUDY INTERSECTIONS

As shown in **Table 4-1** and **Table 4-2**, all study intersections continue to operate at LOS C or better under existing plus project conditions. Additionally, none of the study intersections within the Forest meet peak hour signal warrants (see **Table 4-3**). ***Impacts resulting from the Project are less than significant at all study intersections and no mitigation measures are required.***

4.1.2 FOREST GATES

The volume-to-capacity results are presented in **Table 4-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table 2-5**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus Project conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the Project are less than significant at all Forest gates and no mitigation measures are required.***



4.2 IMPACTS AND MITIGATION MEASURES – NEAR TERM PLUS PROJECT

4.2.1 STUDY INTERSECTIONS

As shown in **Table 4-1** and **Table 4-2**, all study intersections continue to operate at LOS C or better under near term plus project conditions. Additionally, none of the study intersections meet peak hour signal warrants (see **Table 4-3**). ***Impacts resulting from the project are less than significant at all internal Forest study intersections and no mitigation measures are required.***

4.2.2 FOREST GATES

The volume-to-capacity results are presented in **Table 4-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table 2-3**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus Project conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the project are less than significant at all Forest gates and no mitigation measures are required.***

4.3 IMPACTS AND MITIGATION MEASURES – CUMULATIVE PLUS PROJECT

4.3.1 STUDY INTERSECTIONS

As shown in **Table 4-1** and **Table 4-2**, all study intersections continue to operate at LOS C or better under cumulative plus project conditions. Additionally, none of the study intersections meet peak hour signal warrants (see **Table 4-3**). ***Impacts resulting from the project are less than significant at all internal Forest study intersections and no mitigation measures are required.***

The Del Monte Forest Plan EIR (2012) identified a series of impacted intersections and mitigations. While the Project is adding traffic to these intersections, the number of Project trips is negligible (5 or less trips) and the Project should pay for their fair share to the Del Monte Forest Plan EIR mitigations in proportion to the number of trips. Intersections where the Project would add more than 5 trips were evaluated as part of this assessment. **Table 4-5** and **Table 4-6** show a list of impacted intersections and highway segments, respectively, from the DMFP EIR and the number of project trips assigned to the intersection. The tables include the impact and mitigation number identified in the DMFP EIR.



4.3.2 FOREST GATES

The volume-to-capacity results are presented in **Table 4-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table 2-3**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus Project conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the project are less than significant at all Forest gates and no mitigation measures are required.***

4.4 FAIR SHARE

As summarized above, all study intersections and forest gates continue to operate at an acceptable level and the Project impact is less than significant and no mitigation measures are required. However, the Project is responsible for paying its fair share contribution of fees identified in the DMFP EIR, summarized in Tables 4-5 and 4-6 below, to the extent not covered by the Company's funding of the Highway 1 / Highway 68 intersection or roundabout Project.



**TABLE 4-1
AM INTERSECTION PEAK HOUR LEVEL OF SERVICE WITH PROJECT**

Description		Intersection Delay and Level of Service					
		Existing Year 2014 LOS		Near Term Year 2017 LOS		Cumulative Year 2030 LOS	
		No Project	With Project	No Project	With Project	No Project	With Project
Signalized Intersections¹							
3	Forest Ave. (Highway 68)/David Ave.	24 / C	24 / C	24 / C	25 / C	25 / C	25 / C
4	Highway 68 / SFB Morse Gate	4 / A	4 / A	4 / A	4 / A	4 / A	4 / A
All-Way Stop Intersections²							
1	Congress Ave. / Forest Lodge Rd.	14 / B	14 / B	14 / B	14 / B	12 / B	12 / B
2	Congress Ave. / David Ave.	17 / C	17 / C	18 / C	19 / C	16 / C	16 / C
6	Congress Road / SFB Morse Drive	8 / A	8 / A	8 / A	8 / A	8 / A	8 / A
Side-Street Stop Intersections³							
5	Congress Road / Forest Lodge	2 (12) / A (B)	2 (12) / A (B)	2 (12) / A (B)	3 (12) / A (B)	3 (12) / A (B)	3 (13) / A (B)

Notes:

- 1 Signalized intersection level of service based on control delay per vehicle, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 2 All-way stop intersection level of service based on average intersection delay, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 3 Side street stop controlled intersection level of service based on average control delay for critical side street movement, according to the 2000 *Highway Capacity Manual*, Transportation Research Board, 2000.

Source: Fehr & Peers (December 2014)



**TABLE 4-2
PM INTERSECTION PEAK HOUR LEVEL OF SERVICE WITH PROJECT**

Description		Intersection Delay and Level of Service					
		Existing Year 2014 LOS		Near Term Year 2017 LOS		Cumulative Year 2030 LOS	
		No Project	With Project	No Project	With Project	No Project	With Project
Signalized Intersections¹							
3	Forest Ave. (Highway 68)/David Ave.	29 / C	29 / C	30 / C	31 / C	34 / C	34 / C
4	Highway 68 / SFB Morse Gate	3 / A	3 / A	4 / A	4 / A	4 / A	4 / A
All-Way Stop Intersections²							
1	Congress Ave. / Forest Lodge Rd.	11 / B	11 / B	12 / B	12 / B	12 / B	12 / B
2	Congress Ave. / David Ave.	11 / B	11 / B	11 / B	12 / B	13 / B	13 / B
6	Congress Road / SFB Morse Drive	8 / A	8 / A	8 / A	8 / A	8 / A	8 / A
Side-Street Stop Intersections³							
5	Congress Road / Forest Lodge	4 (16) / A (C)	5 (17) / A (C)	5 (17) / A (C)	5 (18) / A (C)	4 (16) / A (C)	5 (16) / A (C)

Notes:

- 1 Signalized intersection level of service based on control delay per vehicle, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 2 All-way stop intersection level of service based on average intersection delay, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.
- 3 Side street stop controlled intersection level of service based on average control delay for critical side street movement, according to the 2000 *Highway Capacity Manual*, Transportation Research Board, 2000.

Source: Fehr & Peers (December 2014)



**TABLE 4-3
PEAK HOUR TRAFFIC SIGNAL WARRANT ANALYSIS WITH PROJECT**

	Description	Peak Hour	Existing Year 2014	Near Term Year 2017	Cumulative Year 2030
1	Congress Avenue / Forest Lodge Road	AM(PM)	No(No)	No(No)	No(No)
2	Congress Avenue / David Avenue	AM(PM)	No(No)	No(No)	No(No)
5	Congress Road / Forest Lodge	AM(PM)	No(No)	No(No)	No(No)
6	Congress Road / SFB Morse Drive	AM(PM)	No(No)	No(No)	No(No)

Yes – The intersection meets the peak hour traffic signal warrant

No – The intersection does not meet the peak hour traffic signal warrant

1 The Congress Avenue / David Avenue intersection does not meet the peak hour signal warrants when the westbound right turn volume is removed from the calculation which was done because the westbound right-turn movement operates independently from the westbound through and left movements.

Source: Fehr & Peers (December 2014)

**TABLE 4-4
FOREST GATE PEAK HOUR VOLUMES AND LEVEL OF SERVICE WITH PROJECT**

Description	Capacity	Peak Hour	Peak Hour Volume (Volume-to-Capacity Ratio) ¹		
			Existing Year 2014 ²	Near Term Year 2017	Cumulative Year 2030
SFB Morse	520	AM	145 (0.28)	150 (0.29)	170 (0.33)
		PM	134 (0.26)	142 (0.27)	157 (0.30)
Country Club Gate	600	AM	201 (0.34)	207 (0.35)	227 (0.38)
		PM	199 (0.33)	210 (0.35)	231 (0.39)

Note:

1 Volume-to-capacity ratio describes the inbound peak hour traffic flow as it relates to gate capacity. A ratio less than 0.90 is considered acceptable.

Source: Fehr & Peers (December 2014)



**TABLE 4-5
CUMULATIVE PROJECT-RELATED VEHICLE TRIPS THROUGH DMFP EIR IMPACTED INTERSECTIONS**

Study Intersection	Project Related Trips		Cumulative Trips ¹		Cumulative Plus Project Trips		Impact Number	Mitigation Number ²
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour		
2. Sunset Dr. (Highway 68) / Congress Rd.	1	1	1,071	1,115	1,072	1,116	TRA-C1(C)	MM TRA-C6(C)
5. Forest Ave. (Highway 68) / David Ave.	-- ³	6	-- ³	2,673	-- ³	2,679	TRA-C1(C)	MM TRA-C7(C)
9. Highway 68 / Skyline Forest Dr.	3	4	2,936	3,181	2,939	3,185	TRA-C1(C)	MM TRA-C1(C)
12. Highway 68 / Carmel Hill Professional Center	2	3	3,095	3,209	3,097	3,212	TRA-C1(C)	MM TRA-C2(C)
13. Highway 68 / Highway 1 SB Off-Ramp	2	3	3,911	3,992	3,913	3,995	TRA-C1(C)	MM TRA-C8(C)
15. Highway 68 / Aguajito Rd.	-- ³	1	-- ³	2,271	-- ³	2,272	TRA-C1(C)	MM TRA-C9(C)
16. Highway 1 / Carpenter Street	-- ³	0	-- ³	5,389	-- ³	5,389	N/A ⁴	N/A ⁴

Notes:

1 Cumulative Trips = estimated number of vehicles at the intersection in 2030 AM/PM peak hour with DMFP EIR project trips.

2 Reference mitigation

MM-TRA-C1(C): Pay fair-share contribution to install a traffic signal at the intersection of SR 68 / Skyline Forest Drive and widen SR 68 from two to four lanes through the intersection.

MM-TRA-C2(C): Pay fair-share contribution to construct the full SR 68 Widening Project.

MM-TRA-C6(C): Pay fair-share contribution to restripe the westbound approach at the Sunset Drive / Congress Avenue intersection to provide a left-turn pocket.

MM-TRA-C7(C): Pay fair-share contributions to optimize signal timings and phasing at the Forest Avenue / David Avenue intersection.

MM-TRA-C8(C): Pay fair-share contribution to construct the full SR 68 Widening Project (as identified in the MM TRA-C2) and to construct a third eastbound lane on SR 68 from east of the Carmel Hill Professional Center driveway through the SR 1 intersection, with one lane going to the SR 1 southbound on-ramp and two lanes proceeding across the SR 68 overcrossing.

MM-TRA-C9(C): Pay fair-share contribution to construct a refuge lane on SR 68 for traffic turning left out of the Aguajito Road intersection.

3 No Project impact to the intersection during the AM peak hour.

4 Project does not add trips to the intersection; therefore, the Project is not responsible for paying their fair-share of mitigation measures.

Source: Fehr & Peers



**TABLE 4-6
CUMULATIVE PROJECT-RELATED VEHICLE TRIPS THROUGH DMFP EIR IMPACTED HIGHWAY SEGMENTS AND
RAMPS**

Highway	Segment	Direction / Section Type	Project Related Trips		Cumulative Trips ¹		Cumulative Plus Project Trips ¹		Impact Number	Mitigation Number ²
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour		
SR 1	SR 68 (west) to Munras Avenue	North	2	1	2,378	3,161	2,380	3,162	TRA-C2(C)	MM TRA-C4 ²
	Munras Avenue to Fremont Street	North South	-- ³ 0	1 -- ³	-- ³ 2,782	2,601 -- ³	-- ³ 2,782	2,602 -- ³	TRA-C2(C)	MM TRA-C4 ²
	Fremont Street to Fremont Boulevard	North South	-- ³ 0	1 -- ³	-- ³ 4,212	3,912 -- ³	-- ³ 4,212	3,913 -- ³	TRA-C2(C)	MM TRA-C4 ²
	Fremont Boulevard to Imjin Parkway	North	-- ³	0	-- ³	4,613	-- ³	4,613	N/A ⁴	N/A ⁴
	North of SR 156	North South	0 0	0 0	1,275 2,467	2,877 1,796	1,275 2,467	2,877 1,796	N/A ⁴	N/A ⁴
SR 68	East of Olmsted Road	West	0	1	1,135	1,744	1,135	1,745	TRA-C2(C)	MM TRA-C4 ²
	East of Laguna Seca	East West	1 -- ³	-- ³ 0	1,656 -- ³	-- ³ 1,738	1,657 -- ³	-- ³ 1,738	TRA-C2(C)	MM TRA-C4 ²
US 101	North of 156	South	-- ³	0	-- ³	2,586	-- ³	2,586	N/A ⁴	N/A ⁴
SR 156	SR 1 to US 101	East	-- ³	0	-- ³	1,708	-- ³	1,708	N/A ⁴	N/A ⁴
Ramp	SR 1 Northbound On-Ramp from SR 68	Merge	-- ³	1	-- ³	2,371	-- ³	2,372	TRA-C3(C)	MM TRA-C5 ²

Notes:

1 Cumulative Trips = estimated number of vehicles at the intersection in 2030 AM/PM peak hour with DMFP EIR project trips.

2 Reference mitigation

MM-TRA-C4: Pay fair-share traffic impact fee for various improvements to SR 1, SR 68, and SR 156 based on the conditions described in TAMC's Regional Development Impact Fee Program.

MM-TRA-C5: Pay fair-share contribution to replace the SR 1 northbound merge at SR 68 (west) with an auxiliary lane between SR 68 (west) and Munras Avenue.

3 No Project impact to the intersection during the AM or PM peak hour.

4 Project does not add trips to the intersection; therefore, the Project is not responsible for paying their fair-share of mitigation measures.

Source: Fehr & Peers



5.0 TRANSIT

The Monterey Salinas Transit Agency (MST) provides bus service to the Monterey and Salinas areas and service extends to Watsonville. MST has one route that travels directly into the Forest. There are two additional routes traveling within the DMFP vicinity that are accessible by walking.

5.1 MST TRANSIT

5.1.1 ROUTES

Route 1X – Asilomar / Lovers Point Express is a local express service with a stop on 17-Mile Drive at Sunset Drive, several hundred feet from the Pacific Grove Gate. It primarily serves Pacific Grove and travels to the Monterey Transit Plaza. This service operates daily between about 6:00 AM and 7:00 PM with 60 minute headways.

Route 2X – Pebble Beach Express is an express service with a stop at The Inn at Spanish Bay and The Lodge at Pebble Beach. It provides service to the major transit centers including the Monterey Transit Plaza, Edgewater Transit Exchange, and Marina Transit Exchange and eventually to the Salinas Transit Center. This service operates daily to Pebble Beach in the morning commute period and to Salinas in the evening commute period. This service was implemented after the environmental studies were completed for the previous development proposal by Pebble Beach Company.

Route 78 – Presidio / Pacific Grove is a local service with a stop on 17-Mile Drive at Sunset Drive, several hundred feet from the Pacific Grove Gate. It primarily serves morning and evening weekday commute period traveling in Pacific Grove, to the Presidio, and to the Monterey Transit Plaza.

No other routes provide service with stops that are accessible to the Forest.

5.1.2 EMERGENCY GUARANTEED RIDE HOME (EGRH)

Commute Alternatives, a program of the Association for Monterey Bay Area Governments (AMBAG), provides a guaranteed ride home in an emergency to registered users who use alternative transportation to get to work. The EGRH program is available to commuters who live or work in Monterey County and who ride the bus, carpool, vanpool, ride a bicycle or walk to work at least one day a week. In order to participate, you must register with Commute Alternatives by calling (831) 422-7665. This service will



reimburse up to \$60 for a taxi or rental car in case of personal illness, a sick family member, a serious problem at a child's school or day care, or if you must unexpectedly work late.

5.1.3 SHORT-RANGE MST TRANSIT PLAN

The Short-Range Transit Plan (SRTP) prepared by MST sets forth operating and capital projects during the next three years. The SRTP compares existing transit service and performance to adopted goals, objectives, and policies. The SRTP recommends operating, capital, and planning improvements needed to more efficiently and effectively serve the traveling public. The SRTP also programs funding necessary for improvements.

The SRTP identifies transit service needs and deficiencies. Within the unincorporated areas, service to Pebble Beach/Del Monte Forest/Spanish Bay is noted in the SRTP as having started in 2004. The SRTP also indicates that MST carried about 5,000 passengers to Pebble Beach via supplemental service over the four-day AT&T golf tournament. Potential ridership directly into Pebble Beach will continue to be monitored by MST.

5.2 PEBBLE BEACH COMPANY SHUTTLES

Pebble Beach Company operates private shuttles serving visitors between destinations within the Forest and to neighboring jurisdictions as requested including Carmel, Pacific Grove, Monterey, and the Monterey Airport. Popular service destinations are scheduled while others are based on customer requests. The Company also operates shuttles for employees during times when employee parking is not available at the work site.



6.0 BICYCLE AND PEDESTRIANS

Bicycles are allowed in the Forest during daylight hours and riders are advised to use designated bicycle routes. Riders may enter and exit at any gate. Bicycles are not permitted on hiking or equestrian trails at any time. A paved, marked bicycle route is provided from the Pacific Grove Gate to The Lodge area along 17-Mile Drive, Spanish Bay Road, Spyglass Hill Road, and Stevenson Drive. The bicycle route is identified with the bicycle symbol for purposes of wayfinding. The marked route terminates on Stevenson Drive near Ondulado Road.

Although advised to retrace the route once they have reached Ondulado Road, bicyclists may elect to continue along Stevenson Drive and 17-Mile Drive, a narrow road with heavy traffic volumes, to an exit at the Carmel Gate. LUP Policy 108 requires bicycle route safety improvements along 17-Mile Drive from the Pacific Grove Gate to Fan Shell Beach. The policy also requires access between Fan Shell Beach and the Carmel Gate to continue to be available as a bicycle route and not as bicycle lanes. This requirement has been satisfied. The LUP does not require improved bicycle lanes to Carmel Gate and none would be feasible given the findings from a 1994 engineering report completed by Creegan & D'Angelo.

There are no significant adverse impacts to the existing Class II and Class III bicycle facility attributable to the Project.

The project does not make any changes to the trail system in the Forest. Trail crossings of the road system would fall within the design guidelines of the Del Monte Forest Transportation Policy Agreement which indicate general stopping site distance criteria for Forest roads. There are no significant adverse impacts to the trail system from a transportation perspective so long as the trail crossings at Forest roads are designed based on the guidance in the Del Monte Forest Transportation Agreement. In addition, the Company is working with the California Coastal Commission Staff to incorporate design elements from the California Coastal Trail network into the Forest network.



7.0 PARKING

Parking is not considered a CEQA impact under the current guidelines. The information presented in this Chapter is for information purposes, comparing the County Code against the parking supply. The analysis evaluates whether or not the proposed project provides sufficient parking to meet requirements based on County code.

The Project includes development of 24 apartment units, consisting of sixteen 2-bedroom units and eight 3-bedroom units. The Project also includes 431 s.f. of office space. The proposed site plan includes 67 total parking spaces, with 24 covered spaces, 40 standard uncovered spaces, and 3 accessible spaces.

**TABLE 7-1
MONTEREY COUNTY PARKING CODE REQUIREMENTS**

Development Component	Parking Ratios	Parking Required
2-Bedroom Apartments (16 units)	2 spaces / unit	32 Spaces
3-Bedroom Apartments (8 units)	2.2 spaces / unit	18 Spaces
Residential Guest Parking	1.0 space / 4 units	6 Spaces
Office (431 s.f.)	1.0 space / 250 s.f.	2 Spaces
	Total	58 Spaces
	Parking Provided Surplus (Deficit)	67 Spaces 9 Spaces

Source: Fehr & Peers (December 2014)

As shown in **Table 7-1**, under the current County Code, the proposed project would require a total of 58 spaces due to the requirement that multiple-family residential developments require one guest parking space per every four units. As the project provides 67 spaces, the parking provided is in compliance with County Code.



8.0 SITE CIRCULATION

The Project site plans have been reviewed with consideration for safe and efficient circulation of vehicles, bicyclists, and pedestrians through the Project site and on the roadways adjacent to the Project site. The site plan review focuses on:

- Site access/Proposed driveways and interface with the existing roadway network, including corner site distances and a review of driveway spacing
- Vehicle circulation within and adjacent to the site
- Pedestrian access and circulation within and adjacent to the site
- Bicycle access and circulation within and adjacent to the site

Site recommendations are presented on **Figure 8-1**.

8.1 VEHICULAR ACCESS AND CIRCULATION

Access to the Project would be provided by two driveways on SFB Morse Drive. The site access intersections are expected to operate with minimal delay.

Recommendation: Add sign, and stop bar with legend for vehicles exiting the Project driveways.

8.1.1 SITE DISTANCE AND DRIVEWAY ASSESSMENT

A sight distance assessment was conducted at the SFB Morse Drive driveways. As noted in the Del Monte Forest Transportation Policy Agreement in Section 1.4.3, internal roadways must have a stopping sight distanced of 250 feet for 17-Mile Drive and primary roads, and 200 feet for all local roadways. **Figure 8-2** summarizes the sight distance assessment.

8.1.1.1 Sight Distance Analysis

Sight distance signifies the line of sight maintained between the driver of a vehicle waiting at the cross road, in this case vehicles on the driveway approach and entering SFB Morse Drive. Adequate sight distance is feasible at the northern and southern driveway if landscaping is maintained and parking is prohibited adjacent to the exit driveway.



Recommendation: Maintain landscaping along SFB Morse Drive, adjacent to the Project driveways, to avoid sight distance conflicts (shrubs should not be higher than approximately 30 inches and tree canopies should be approximately six feet from the ground).

8.1.1.2 Stopping Sight Distance

Stopping sight distance is the distance required by the driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object in the road becomes visible and in advance of reaching the object. The HDM defines the minimum stopping sight distance requirement as 150 feet for a roadway with a posted speed limit of 25 MPH.

For vehicles turning from SFB Morse Drive into the project driveway or vehicles passing driveways, sight distance is estimated to be over 150 feet, thus meeting the stopping sight distance requirements.

8.1.2 EMERGENCY VEHICLE ACCESS

Emergency vehicles can access the site from either driveway on SFB Morse Drive, so if one entrance is blocked, alternative access would be available.

Recommendation: The fire department should review the site plan for fire truck and emergency vehicle access.

8.2 PEDESTRIAN ACCESS

Pedestrian facilities are provided adjacent to the site and along the driveways. Sidewalks terminating at the driveway entrance will connect with dirt paths along SFB Morse Drive.

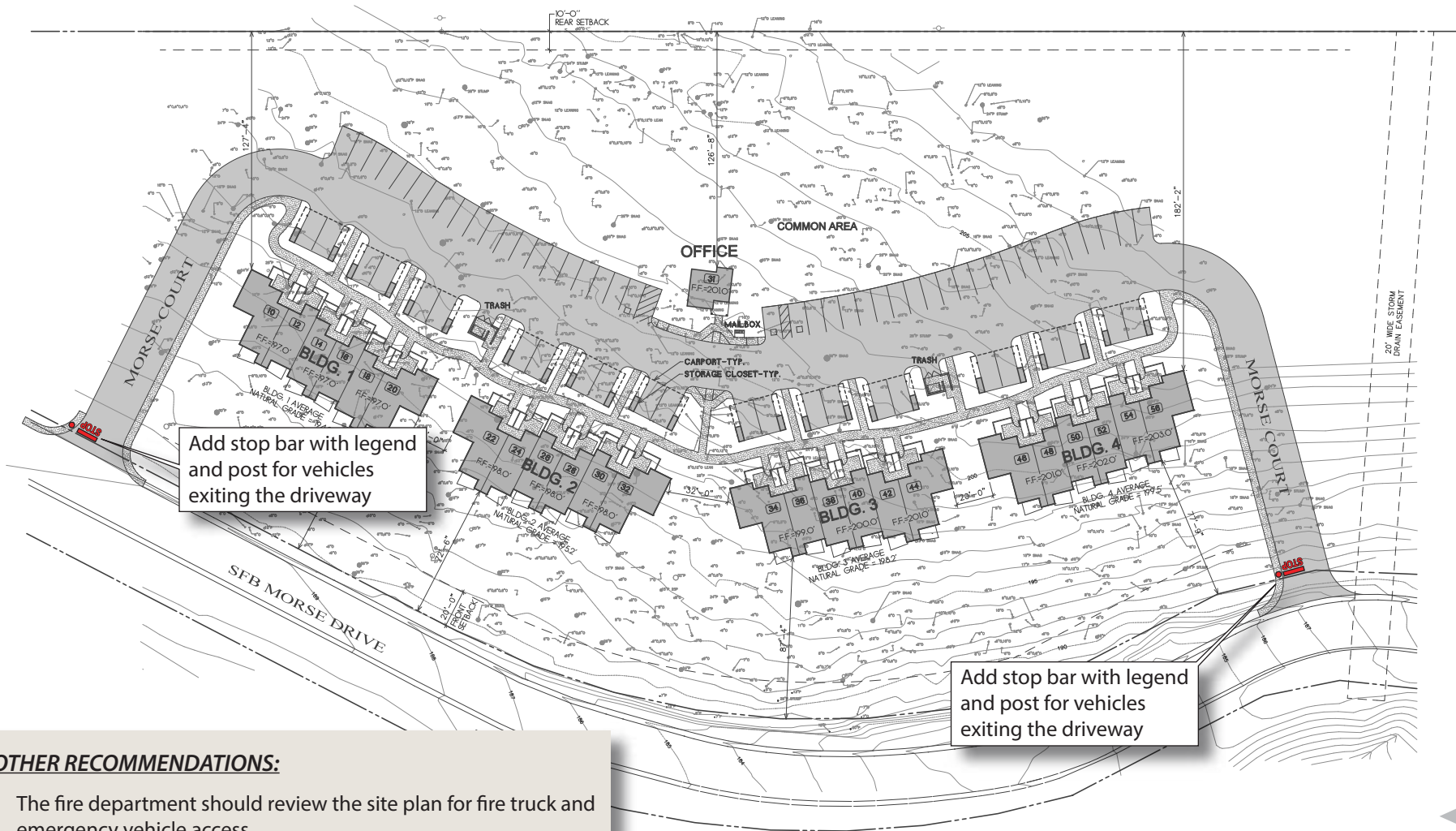
8.3 BICYCLE ACCESS

Bicycle facilities on-site are not provided, though small storage closets are provided for each unit, which could be used for bicycle storage. The Project should consider permanent bicycle storage units for residential use.

Class II and III bicycle facilities are provided within the Forest. The Project should consider providing residents a bicycle map showing how residents can access routes within the Forest.

Recommendation: Consider providing bicycle storage units and bicycle maps to residents.



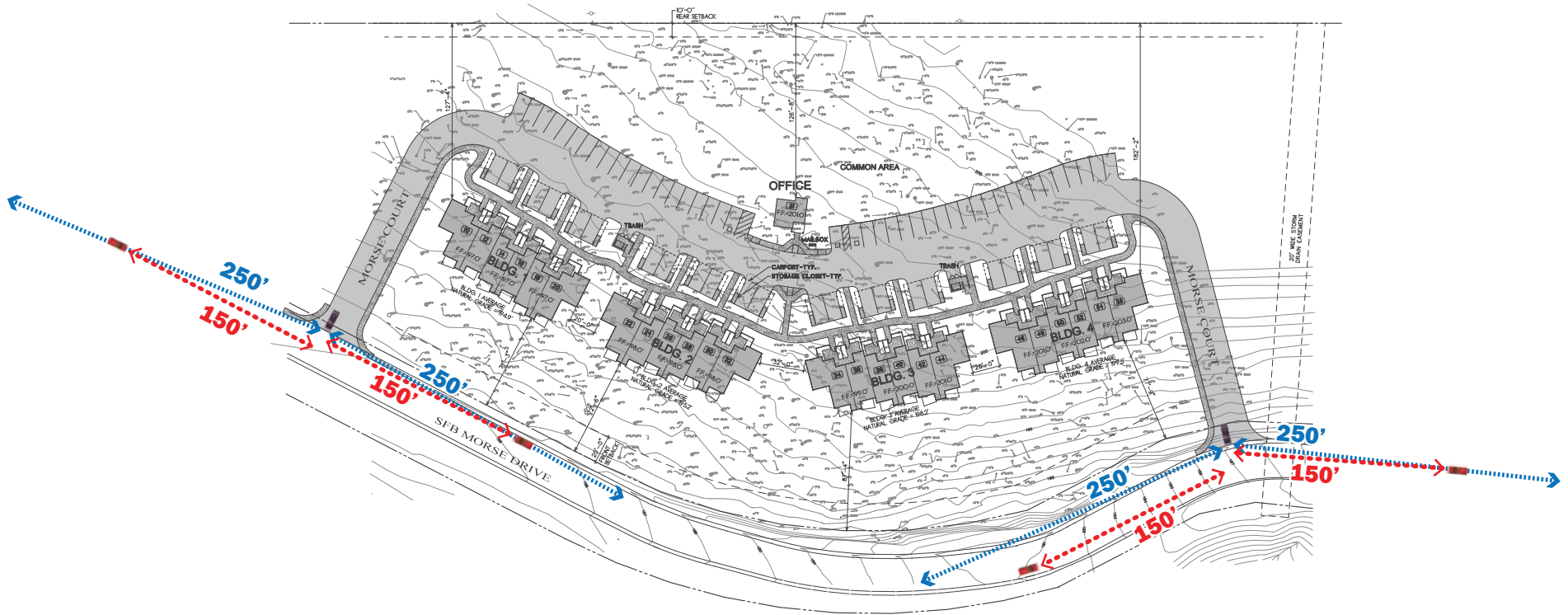


OTHER RECOMMENDATIONS:

- The fire department should review the site plan for fire truck and emergency vehicle access.
- Consider providing bicycle storage and bicycle maps to residents.
- Maintain landscaping at Project driveways to avoid sight distance conflicts. Shrubs should not be higher than approximately 30 inches and tree canopies should be approximately six feet from the ground.

Note: Figure Not to Scale





Note: Figure Not to Scale

LEGEND

- ←---X'--- Stopping Sight Distance (in feet)
- ←---Y'--- Corner Sight Distance (in feet)

Note: Stopping sight distance based on the Del Monte Forest Transportation Policy Agreement (October 20, 1987), which states that stopping sight distance must be 250 feet for 17-Mile Drive and primary roads, and 200 feet for local roads.



9.0 CONSTRUCTION IMPACTS

The Company will construct the Project at the same time as certain projects identified in the Del Monte Forest Plan (DMFP) and follow construction plan consistent with those outlined in the DMFP EIR. The Company intends to make efficient use of truck traffic during the heaviest times of construction (excavation and grading), and to complete work as soon as possible, thereby minimizing construction impacts to residents of the Forest, Pacific Grove, guests, and visitors.

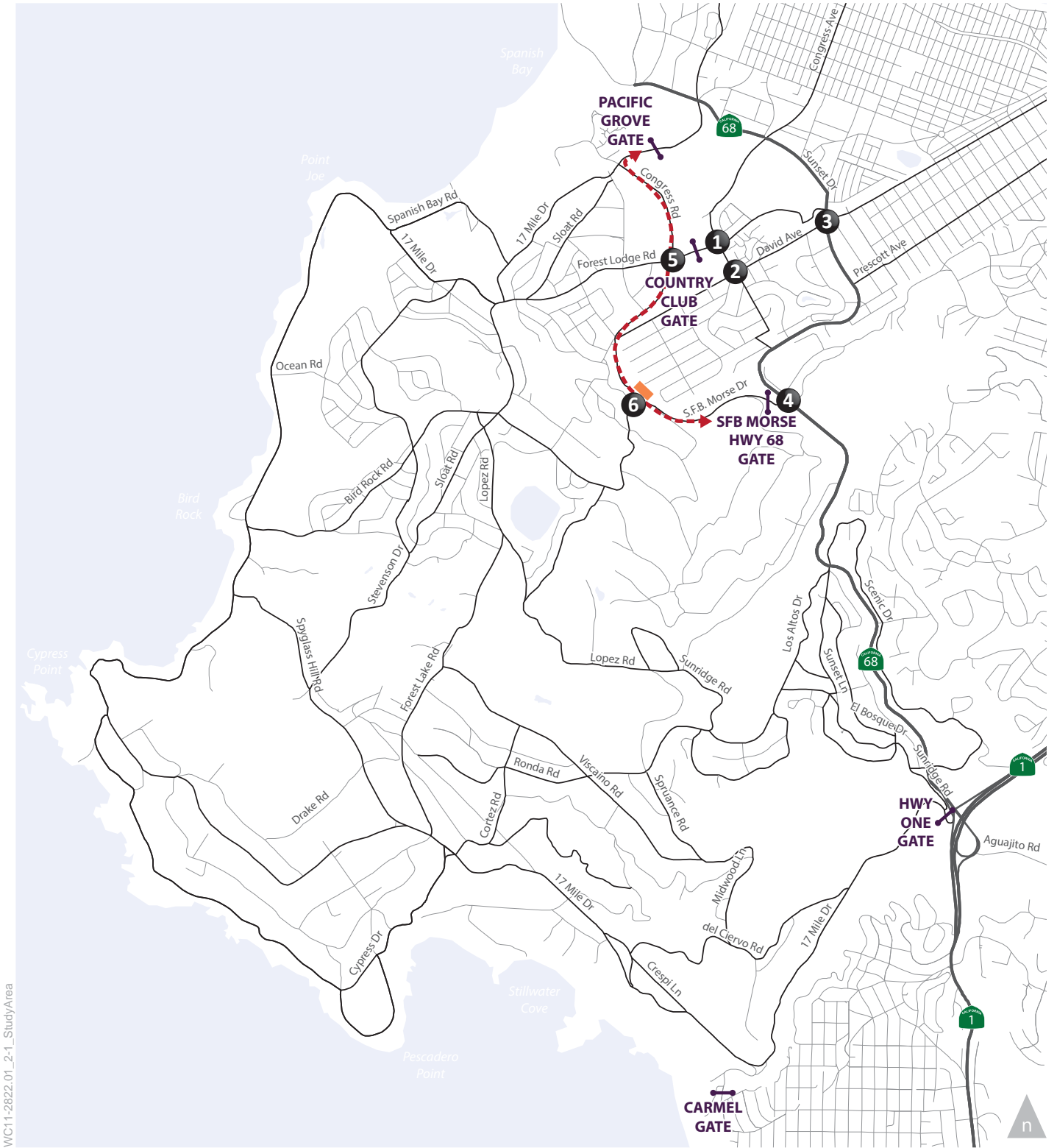
The Company proposes to limit major construction truck activity to key collector roads in the Forest. Truck access to the Project would be served via the SFB Morse Gate. It is not expected that trucks will need to travel between the Project site and other construction areas in the Forest, but if required truck traffic would generally use Congress Road, Lopez Road, and/or Forest Lake Road. **Figure 9-1** illustrates key collector road corridors that will be used by construction truck.

Construction workers generally arrive to the work site prior to the morning peak hour of traffic congestion and leave the work site prior to evening peak hour of traffic congestion, minimizing traffic impacts to area streets and roads. Construction workers traffic is considered a less than significant impact because the added traffic is not permanent and will only occur during construction period. Construction activities shall be limited between the hours of 8:00 AM and 6:00 PM, Monday through Saturday, per the Del Monte Forest Architectural Board Guidelines imposed on development within the Forest. Construction traffic will therefore generally begin no earlier than 7:00 AM and end no later than 6:30 PM Monday through Saturday.

A set of comprehensive traffic control measures shall be prepared prior to issuance of building permits. These measures include scheduling of major truck trips and deliveries to avoid special event activity in the Forest and minimize peak hour activity on roads operating below LOS significance thresholds. Lane closure procedures, including signs, cones, and other warning devices for drivers, shall be identified as appropriate. Use of steel plates to maintain through traffic on roads shall be considered and construction access routes shall be identified. Construction staging is anticipated to occur on-site for all project components and shall be verified. On-site parking within Company properties shall be provided for all construction workers. When on-site parking cannot be provided, alternative parking and shuttle systems shall be developed and verified.

When possible, construction truck travel will occur on collector and arterial roads and not on local/residential streets. Traffic control shall be used during major off-hauling activities. Any damages attributable to haul trucks on haul routes shall be repaired.





WC11-2822.01_2-1_StudyArea

LEGEND

- # Study Intersection
- Project Site
- Construction Route



Figure 9-1

Construction Truck Routing

APPENDIX A: INTERSECTION COUNTS



ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	5	24	4	1	34	10	2	3	0	15	21	25	7	0	53	9	5	10	0	24	126	1
07:15	3	39	2	1	45	14	4	8	0	26	30	32	26	0	88	9	4	18	0	31	190	1
07:30	1	36	4	0	41	5	4	6	0	15	39	38	7	0	84	10	2	25	0	37	177	0
07:45	3	31	10	0	44	11	4	3	0	18	46	27	7	0	80	14	4	19	0	37	179	0
Total	12	130	20	2	164	40	14	20	0	74	136	122	47	0	305	42	15	72	0	129	672	2
08:00	4	33	12	0	49	10	2	8	0	20	33	28	7	0	68	7	11	19	0	37	174	0
08:15	8	45	6	0	59	18	8	10	0	36	29	50	22	0	101	20	10	24	0	54	250	0
08:30	8	57	8	4	77	17	8	12	0	37	39	70	21	0	130	18	10	26	0	54	298	4
08:45	5	50	11	0	66	13	7	8	0	28	24	34	5	0	63	9	4	27	0	40	197	0
Total	25	185	37	4	251	58	25	38	0	121	125	182	55	0	362	54	35	96	0	185	919	4
16:00	8	39	7	2	56	11	13	16	0	40	30	51	13	0	94	11	12	34	0	57	247	2
16:15	10	43	11	2	66	8	10	10	0	28	36	37	11	0	84	5	8	42	0	55	233	2
16:30	16	39	10	0	65	13	3	16	0	32	32	54	12	0	98	13	11	62	0	86	281	0
16:45	11	35	8	5	59	5	5	17	0	27	33	49	15	1	98	16	6	27	0	49	233	6
Total	45	156	36	9	246	37	31	59	0	127	131	191	51	1	374	45	37	165	0	247	994	10
17:00	11	34	11	0	56	11	13	11	0	35	41	51	10	1	103	9	6	36	0	51	245	1
17:15	14	28	9	2	53	4	6	25	0	35	41	47	10	0	98	8	11	24	0	43	229	2
17:30	7	32	12	1	52	7	4	14	0	25	33	43	6	0	82	7	6	33	0	46	205	1
17:45	9	24	8	2	43	5	5	11	0	21	42	32	14	0	88	3	8	29	0	40	192	2
Total	41	118	40	5	204	27	28	61	0	116	157	173	40	1	371	27	31	122	0	180	871	6
Grand Total	123	589	133	20	865	162	98	178	0	438	549	668	193	2	1412	168	118	455	0	741	3456	22
Apprch %	14.2%	68.1%	15.4%	2.3%		37.0%	22.4%	40.6%	0.0%		38.9%	47.3%	13.7%	0.1%		22.7%	15.9%	61.4%	0.0%			
Total %	3.6%	17.0%	3.8%	0.6%	25.0%	4.7%	2.8%	5.2%	0.0%	12.7%	15.9%	19.3%	5.6%	0.1%	40.9%	4.9%	3.4%	13.2%	0.0%	21.4%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	4	33	12	0	49	10	2	8	0	20	33	28	7	0	68	7	11	19	0	37	174
08:15	8	45	6	0	59	18	8	10	0	36	29	50	22	0	101	20	10	24	0	54	250
08:30	8	57	8	4	77	17	8	12	0	37	39	70	21	0	130	18	10	26	0	54	298
08:45	5	50	11	0	66	13	7	8	0	28	24	34	5	0	63	9	4	27	0	40	197
Total Volume	25	185	37	4	251	58	25	38	0	121	125	182	55	0	362	54	35	96	0	185	919
% App Total	10.0%	73.7%	14.7%	1.6%		47.9%	20.7%	31.4%	0.0%		34.5%	50.3%	15.2%	0.0%		29.2%	18.9%	51.9%	0.0%		
PHF	.781	.811	.771	.250	.815	.806	.781	.792	.000	.818	.801	.650	.625	.000	.696	.675	.795	.889	.000	.856	.771

PM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	8	39	7	2	56	11	13	16	0	40	30	51	13	0	94	11	12	34	0	57	247
16:15	10	43	11	2	66	8	10	10	0	28	36	37	11	0	84	5	8	42	0	55	233
16:30	16	39	10	0	65	13	3	16	0	32	32	54	12	0	98	13	11	62	0	86	281
16:45	11	35	8	5	59	5	5	17	0	27	33	49	15	1	98	16	6	27	0	49	233
Total Volume	45	156	36	9	246	37	31	59	0	127	131	191	51	1	374	45	37	165	0	247	994
% App Total	18.3%	63.4%	14.6%	3.7%		29.1%	24.4%	46.5%	0.0%		35.0%	51.1%	13.6%	0.3%		18.2%	15.0%	66.8%	0.0%		
PHF	.703	.907	.818	.450	.932	.712	.596	.868	.000	.794	.910	.884	.850	.250	.954	.703	.771	.665	.000	.718	.884

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total	Ped Total			
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL					
07:00	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	1	3
07:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	2
07:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	3	0	0	0	0	1	0	0	3	2	0	5	0	0	0	1	0	0	0	0	1	5
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:00	0	0	0	1	0	0	1	0	0	1	0	0	0	2	0	2	1	0	0	3	4	3			
16:15	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	4			
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3			
16:45	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2	1	2	3			
Total	0	0	0	4	0	0	2	0	1	2	0	0	0	3	0	2	2	0	5	4	6	13			
17:00	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2	0	2	4			
17:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	3			
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0			
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1			
Total	0	0	1	3	1	1	0	0	1	1	0	0	0	1	0	1	1	0	3	2	4	8			
Grand Total	0	1	1	10	2	1	2	0	3	3	0	3	2	4	5	3	3	0	11	6	16	28			
Apprch %	0.0%	50.0%	50.0%			33.3%	66.7%	0.0%			0.0%	60.0%	40.0%			50.0%	50.0%	0.0%							
Total %	0.0%	6.3%	6.3%		12.5%	6.3%	12.5%	0.0%		18.8%	0.0%	18.8%	12.5%		31.3%	18.8%	18.8%	0.0%		37.5%	100.0%				

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd
 Date : 10/21/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 08:00 to 09:00																						
Peak Hour For Entire Intersection Begins at 08:00																						
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000		.250

PM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 16:00 to 17:00																						
Peak Hour For Entire Intersection Begins at 16:00																						
16:00	0	0	0	1	0	0	1	0	0	1	0	0	0	2	0	2	1	0	0	3	4	
16:15	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	
16:45	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	2	1	2	
Total Volume	0	0	0	4	0	0	2	0	1	2	0	0	0	3	0	2	2	0	5	4	6	
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			50.0%	50.0%	0.0%				
PHF	.000	.000	.000		.000	.000	.500	.000		.500	.000	.000	.000		.000	.250	.500	.000		.333		.375

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total	Ped Total					
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL							
07:00	0	0	1	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	3	0
07:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	1	0	0	0	0	1	0	0	0	1	3	0
07:30	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	0	0	0	0	1	0	0	0	1	3	0
07:45	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
Total	0	0	2	0	2	1	0	0	0	1	2	1	3	0	6	2	0	0	0	0	2	0	0	0	2	11	0
08:00	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
08:15	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	4	0
08:30	0	0	0	0	0	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	2	3	1	0	0	4	0	4	0	0	4	1	0	0	0	0	1	0	0	0	1	11	0
16:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	1	3	0
16:15	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	2	0
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	2	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	2	1	1	0	4	1	1	0	0	2	0	0	0	0	2	7	0
17:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Grand Total	0	2	3	0	5	4	3	0	0	7	4	6	4	0	14	4	1	0	0	5	0	0	0	0	5	31	0
Apprch %	0.0%	40.0%	60.0%			57.1%	42.9%	0.0%		22.6%	28.6%	42.9%	28.6%		45.2%	80.0%	20.0%	0.0%									
Total %	0.0%	6.5%	9.7%		16.1%	12.9%	9.7%	0.0%		22.6%	12.9%	19.4%	12.9%		45.2%	12.9%	3.2%	0.0%		16.1%					100.0%		

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-003 Congress Avenue-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

AM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:15	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	1	0	0	0	1	4
08:30	0	0	0	0	0	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	5
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	2	3	1	0	0	4	0	4	0	0	4	1	0	0	0	1	11
% App Total	0.0%	50.0%	50.0%			75.0%	25.0%	0.0%			0.0%	100.0%	0.0%		100.0%	0.0%	0.0%				
PHF	.000	.250	.250		.500	.375	.250	.000		.500	.000	.333	.000		.333	.250	.000	.000		.250	.550

PM PEAK HOUR	Congress Avenue Southbound					Forest Lodge Road Westbound					Congress Avenue Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	3
16:15	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	0	1	2	1	1	0	4	1	1	0	0	2	7
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			50.0%	25.0%	25.0%			50.0%	50.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.250	.250	.000		.500	.250	.250	.000		.500	.583

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	11	30	3	0	44	7	4	16	0	27	0	26	2	0	28	12	14	2	0	28	127	0
07:15	23	43	6	0	72	4	10	24	0	38	2	44	10	0	56	20	23	4	0	47	213	0
07:30	29	34	5	0	68	4	10	30	0	44	2	40	14	0	56	16	27	2	0	45	213	0
07:45	21	35	4	0	60	6	16	32	0	54	9	38	6	0	53	12	22	6	0	40	207	0
Total	84	142	18	0	244	21	40	102	0	163	13	148	32	0	193	60	86	14	0	160	760	0
08:00	22	26	15	0	63	5	41	27	0	73	43	26	8	0	77	13	30	15	0	58	271	0
08:15	28	42	14	0	84	4	25	30	0	59	23	44	21	0	88	34	47	21	0	102	333	0
08:30	34	47	17	0	98	5	17	41	0	63	1	47	16	0	64	34	36	3	0	73	298	0
08:45	30	37	22	0	89	4	13	24	0	41	2	27	11	0	40	15	17	0	0	32	202	0
Total	114	152	68	0	334	18	96	122	0	236	69	144	56	0	269	96	130	39	0	265	1104	0
16:00	36	41	7	0	84	11	21	43	0	75	3	37	18	0	58	12	27	5	0	44	261	0
16:15	42	33	15	0	90	13	33	50	0	96	4	24	16	0	44	13	21	2	0	36	266	0
16:30	50	48	15	1	114	8	15	48	0	71	1	35	8	0	44	14	24	2	0	40	269	1
16:45	30	29	14	0	73	15	29	43	0	87	5	40	11	0	56	14	16	3	0	33	249	0
Total	158	151	51	1	361	47	98	184	0	329	13	136	53	0	202	53	88	12	0	153	1045	1
17:00	38	35	11	0	84	13	31	49	0	93	2	38	12	0	52	15	15	3	0	33	262	0
17:15	24	16	13	0	53	12	22	51	0	85	5	40	10	0	55	9	14	1	0	24	217	0
17:30	26	31	14	0	71	14	30	42	0	86	5	32	11	0	48	9	20	1	0	30	235	0
17:45	34	17	12	0	63	8	22	51	0	81	0	31	10	0	41	4	22	3	0	29	214	0
Total	122	99	50	0	271	47	105	193	0	345	12	141	43	0	196	37	71	8	0	116	928	0
Grand Total	478	544	187	1	1210	133	339	601	0	1073	107	569	184	0	860	246	375	73	0	694	3837	1
Apprch %	39.5%	45.0%	15.5%	0.1%		12.4%	31.6%	56.0%	0.0%		12.4%	66.2%	21.4%	0.0%		35.4%	54.0%	10.5%	0.0%			
Total %	12.5%	14.2%	4.9%	0.0%	31.5%	3.5%	8.8%	15.7%	0.0%	28.0%	2.8%	14.8%	4.8%	0.0%	22.4%	6.4%	9.8%	1.9%	0.0%	18.1%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	21	35	4	0	60	6	16	32	0	54	9	38	6	0	53	12	22	6	0	40	207
08:00	22	26	15	0	63	5	41	27	0	73	43	26	8	0	77	13	30	15	0	58	271
08:15	28	42	14	0	84	4	25	30	0	59	23	44	21	0	88	34	47	21	0	102	333
08:30	34	47	17	0	98	5	17	41	0	63	1	47	16	0	64	34	36	3	0	73	298
Total Volume	105	150	50	0	305	20	99	130	0	249	76	155	51	0	282	93	135	45	0	273	1109
% App Total	34.4%	49.2%	16.4%	0.0%		8.0%	39.8%	52.2%	0.0%		27.0%	55.0%	18.1%	0.0%		34.1%	49.5%	16.5%	0.0%		
PHF	.772	.798	.735	.000	.778	.833	.604	.793	.000	.853	.442	.824	.607	.000	.801	.684	.718	.536	.000	.669	.833

PM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	42	33	15	0	90	13	33	50	0	96	4	24	16	0	44	13	21	2	0	36	266
16:30	50	48	15	1	114	8	15	48	0	71	1	35	8	0	44	14	24	2	0	40	269
16:45	30	29	14	0	73	15	29	43	0	87	5	40	11	0	56	14	16	3	0	33	249
17:00	38	35	11	0	84	13	31	49	0	93	2	38	12	0	52	15	15	3	0	33	262
Total Volume	160	145	55	1	361	49	108	190	0	347	12	137	47	0	196	56	76	10	0	142	1046
% App Total	44.3%	40.2%	15.2%	0.3%		14.1%	31.1%	54.8%	0.0%		6.1%	69.9%	24.0%	0.0%		39.4%	53.5%	7.0%	0.0%		
PHF	.800	.755	.917	.250	.792	.817	.818	.950	.000	.904	.600	.856	.734	.000	.875	.933	.792	.833	.000	.888	.972

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	1	0	0	0	0	1	0	0	0	0	3	0	2	1	0	0	3	3	5
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1
07:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	2	2	2
07:45	0	0	0	2	0	0	0	0	4	0	0	0	0	4	0	2	0	0	0	2	2	10
Total	0	0	0	4	0	0	0	0	6	0	0	0	0	8	0	5	3	0	0	8	8	18
08:00	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	0	1	0	0	1	2	5
08:15	0	0	0	2	0	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0	9
08:30	0	0	0	0	0	0	1	0	1	1	0	0	0	6	0	0	0	0	0	0	0	7
08:45	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2
Total	0	0	1	4	1	0	1	0	5	1	0	0	1	14	1	0	2	0	0	2	5	23
16:00	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
16:15	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	4
16:30	0	0	0	2	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	6
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0	7
Total	0	0	0	6	0	0	0	0	7	0	0	0	0	8	0	0	0	0	0	0	0	21
17:00	0	0	0	1	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	2	3
17:15	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	5
17:45	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Total	0	0	0	3	0	0	3	0	5	3	0	0	0	4	0	0	0	0	0	0	3	12
Grand Total	0	0	1	17	1	0	4	0	23	4	0	0	1	34	1	5	5	0	0	10	16	74
Apprch %	0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			50.0%	50.0%	0.0%				
Total %	0.0%	0.0%	6.3%		6.3%	0.0%	25.0%	0.0%		25.0%	0.0%	0.0%	6.3%		6.3%	31.3%	31.3%	0.0%		62.5%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	0	0	2	0	0	0	0	4	0	0	0	0	4	0	2	0	0	0	2	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	0	1	0	0	1	2
08:15	0	0	0	2	0	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	1	0	1	1	0	0	0	6	0	0	0	0	0	0	1
Total Volume	0	0	0	4	0	0	1	0	9	1	0	0	1	18	1	2	1	0	0	3	5
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			66.7%	33.3%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.250		.250	.250	.250	.000		.375	.625

PM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0
16:30	0	0	0	2	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0
17:00	0	0	0	1	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	4	0	0	2	0	9	2	0	0	0	7	0	0	0	0	0	0	2
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0
07:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	2	0
07:30	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	3	0
07:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	1	0	0	0	1	0	0	5	0	5	0	0	0	0	0	1	1	0	0	2	8	0
08:00	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
08:15	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	5	0
08:30	1	1	0	0	2	0	0	1	0	1	0	1	0	0	1	1	3	0	0	4	8	0
08:45	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2	0
Total	1	2	1	0	4	0	2	2	0	4	1	2	0	0	3	1	5	0	0	6	17	0
16:00	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2	0	0	2	4	0
16:15	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	3	0	0	3	7	0
17:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0
Grand Total	3	2	1	0	6	0	2	11	0	13	1	2	0	0	3	2	10	0	0	12	34	0
Apprch %	50.0%	33.3%	16.7%			0.0%	15.4%	84.6%			33.3%	66.7%	0.0%			16.7%	83.3%	0.0%				
Total %	8.8%	5.9%	2.9%		17.6%	0.0%	5.9%	32.4%		38.2%	2.9%	5.9%	0.0%		8.8%	5.9%	29.4%	0.0%		35.3%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-004 Congress Avenue-David Avenue.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

AM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 07:45 to 08:45																						
Peak Hour For Entire Intersection Begins at 07:45																						
07:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
08:15	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	0	5
08:30	1	1	0	0	2	0	0	1	0	1	0	1	0	0	1	1	3	0	0	4	0	8
Total Volume	1	2	1	0	4	0	1	3	0	4	1	1	0	0	2	1	5	0	0	6	0	16
% App Total	25.0%	50.0%	25.0%			0.0%	25.0%	75.0%			50.0%	50.0%	0.0%			16.7%	83.3%	0.0%				
PHF	.250	.500	.250		.500	.000	.250	.750		1.000	.250	.250	.000		.500	.250	.417	.000		.375		.500

PM PEAK HOUR	Congress Avenue Southbound					David Avenue Westbound					Congress Avenue Northbound					David Avenue Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	0	1	0	0	2	0	2	0	0	0	0	0	0	1	0	0	1	0	4
% App Total	100.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
PHF	.250	.000	.000		.250	.000	.000	.250		.250	.000	.000	.000		.000	.000	.250	.000		.250		.500

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	9	63	3	0	75	7	18	10	0	35	17	33	2	0	52	4	13	23	0	40	202	0
07:15	24	111	5	0	140	13	28	11	0	52	13	45	7	0	65	18	32	29	0	79	336	0
07:30	25	104	15	0	144	29	25	7	0	61	16	43	2	0	61	24	38	27	0	89	355	0
07:45	8	92	9	0	109	21	32	7	0	60	14	57	7	0	78	13	23	26	0	62	309	0
Total	66	370	32	0	468	70	103	35	0	208	60	178	18	0	256	59	106	105	0	270	1202	0
08:00	9	77	8	0	94	14	46	11	0	71	25	75	10	0	110	37	32	18	0	87	362	0
08:15	29	91	23	0	143	14	32	15	0	61	19	65	14	0	98	46	35	23	0	104	406	0
08:30	13	117	15	0	145	28	28	14	0	70	21	68	7	0	96	28	43	19	0	90	401	0
08:45	17	88	7	0	112	18	24	10	0	52	15	67	7	0	89	10	25	13	0	48	301	0
Total	68	373	53	0	494	74	130	50	0	254	80	275	38	0	393	121	135	73	0	329	1470	0
16:00	23	99	15	0	137	29	45	16	0	90	33	134	18	0	185	24	29	27	0	80	492	0
16:15	18	83	22	0	123	23	44	14	0	81	37	116	19	0	172	23	41	26	0	90	466	0
16:30	20	128	17	1	166	28	34	11	0	73	38	142	26	0	206	22	38	31	0	91	536	1
16:45	17	113	16	0	146	25	44	17	0	86	48	124	17	0	189	16	36	29	0	81	502	0
Total	78	423	70	1	572	105	167	58	0	330	156	516	80	0	752	85	144	113	0	342	1996	1
17:00	13	99	13	0	125	27	34	15	0	76	41	127	28	0	196	22	31	27	0	80	477	0
17:15	20	93	16	0	129	22	37	13	0	72	45	155	34	0	234	25	28	28	0	81	516	0
17:30	17	97	13	0	127	25	39	11	0	75	33	125	22	0	180	11	23	30	0	64	446	0
17:45	19	98	24	0	141	27	38	13	0	78	19	65	12	0	96	9	25	26	0	60	375	0
Total	69	387	66	0	522	101	148	52	0	301	138	472	96	0	706	67	107	111	0	285	1814	0
Grand Total	281	1553	221	1	2056	350	548	195	0	1093	434	1441	232	0	2107	332	492	402	0	1226	6482	1
Apprch %	13.7%	75.5%	10.7%	0.0%		32.0%	50.1%	17.8%	0.0%		20.6%	68.4%	11.0%	0.0%		27.1%	40.1%	32.8%	0.0%			
Total %	4.3%	24.0%	3.4%	0.0%	31.7%	5.4%	8.5%	3.0%	0.0%	16.9%	6.7%	22.2%	3.6%	0.0%	32.5%	5.1%	7.6%	6.2%	0.0%	18.9%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	8	92	9	0	109	21	32	7	0	60	14	57	7	0	78	13	23	26	0	62	309
08:00	9	77	8	0	94	14	46	11	0	71	25	75	10	0	110	37	32	18	0	87	362
08:15	29	91	23	0	143	14	32	15	0	61	19	65	14	0	98	46	35	23	0	104	406
08:30	13	117	15	0	145	28	28	14	0	70	21	68	7	0	96	28	43	19	0	90	401
Total Volume	59	377	55	0	491	77	138	47	0	262	79	265	38	0	382	124	133	86	0	343	1478
% App Total	12.0%	76.8%	11.2%	0.0%		29.4%	52.7%	17.9%	0.0%		20.7%	69.4%	9.9%	0.0%		36.2%	38.8%	25.1%	0.0%		
PHF	.509	.806	.598	.000	.847	.688	.750	.783	.000	.923	.790	.883	.679	.000	.868	.674	.773	.827	.000	.825	.910

PM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	20	128	17	1	166	28	34	11	0	73	38	142	26	0	206	22	38	31	0	91	536
16:45	17	113	16	0	146	25	44	17	0	86	48	124	17	0	189	16	36	29	0	81	502
17:00	13	99	13	0	125	27	34	15	0	76	41	127	28	0	196	22	31	27	0	80	477
17:15	20	93	16	0	129	22	37	13	0	72	45	155	34	0	234	25	28	28	0	81	516
Total Volume	70	433	62	1	566	102	149	56	0	307	172	548	105	0	825	85	133	115	0	333	2031
% App Total	12.4%	76.5%	11.0%	0.2%		33.2%	48.5%	18.2%	0.0%		20.8%	66.4%	12.7%	0.0%		25.5%	39.9%	34.5%	0.0%		
PHF	.875	.846	.912	.250	.852	.911	.847	.824	.000	.892	.896	.884	.772	.000	.881	.850	.875	.927	.000	.915	.947

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	1	2	2
07:15	0	2	0	2	2	0	1	0	0	1	0	1	0	0	1	1	0	0	1	1	5	3
07:30	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	4
07:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	3
Total	0	2	0	8	2	0	1	0	0	1	0	2	0	0	2	2	2	0	4	4	9	12
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
08:15	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	5
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:45	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	4
Total	0	1	0	7	1	0	0	0	0	0	0	0	0	0	0	0	2	1	4	3	4	11
16:00	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	4	1	2	5
16:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	1	1	11
16:30	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	14	1	1	17
16:45	0	0	0	6	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	1	10
Total	0	0	0	12	0	0	1	1	0	2	0	0	0	0	0	1	2	0	31	3	5	43
17:00	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	8
17:15	0	0	0	2	0	0	0	0	0	0	1	0	1	0	2	0	2	0	8	2	4	10
17:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	8	0	1	8
17:45	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	6
Total	0	1	0	8	1	0	1	0	0	1	1	0	1	0	2	0	2	0	24	2	6	32
Grand Total	0	4	0	35	4	0	3	1	0	4	1	2	1	0	4	3	8	1	63	12	24	98
Apprch %	0.0%	100.0%	0.0%			0.0%	75.0%	25.0%	0.0%		25.0%	50.0%	25.0%			25.0%	66.7%	8.3%				
Total %	0.0%	16.7%	0.0%		16.7%	0.0%	12.5%	4.2%		16.7%	4.2%	8.3%	4.2%		16.7%	12.5%	33.3%	4.2%		50.0%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
08:15	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total Volume	0	1	0	5	1	0	0	0	0	0	0	0	0	0	0	1	0	1	5	2	3
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%			50.0%	0.0%	50.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250	.000	.250		.500	.750

PM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	14	1	1
16:45	0	0	0	6	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	1
17:00	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1
17:15	0	0	0	2	0	0	0	0	0	0	1	0	1	0	2	0	2	0	8	2	4
Total Volume	0	1	0	14	1	0	1	0	0	1	1	0	1	0	2	0	3	0	31	3	7
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%	0.0%		50.0%	0.0%	50.0%	0.0%		0.0%	100.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.250	.000		.250	.250	.000	.250		.250	.000	.375	.000		.375	.438

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	1	0	0	0	1	0	0	0	0	0	1	2	0	0	3	1	0	1	0	2	6	0
07:15	1	2	0	0	3	0	1	0	0	1	0	2	0	0	2	1	0	0	0	1	7	0
07:30	2	0	1	0	3	2	1	0	0	3	1	1	0	0	2	1	1	0	0	2	10	0
07:45	0	1	0	0	1	1	2	1	0	4	0	1	0	0	1	0	0	0	0	0	6	0
Total	4	3	1	0	8	3	4	1	0	8	2	6	0	0	8	3	1	1	0	5	29	0
08:00	0	3	0	0	3	3	1	1	0	5	1	1	0	0	2	0	0	0	0	0	10	0
08:15	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	7	0
08:30	0	2	0	0	2	2	0	0	0	2	1	3	0	0	4	2	0	2	0	4	12	0
08:45	1	2	0	0	3	2	1	0	0	3	0	0	1	0	1	0	0	0	0	0	7	0
Total	1	10	0	0	11	7	3	1	0	11	2	5	1	0	8	2	1	3	0	6	36	0
16:00	0	0	0	0	0	1	0	0	0	1	3	2	0	0	5	2	0	0	0	2	8	0
16:15	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	5	0
16:30	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	1	1	0	2	7	0
16:45	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2	0
Total	0	3	0	0	3	2	0	0	0	2	3	8	1	0	12	2	2	1	0	5	22	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3	0
17:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
17:45	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0
Total	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	1	1	1	0	3	8	0
Grand Total	5	20	1	0	26	12	7	2	0	21	7	20	2	0	29	8	5	6	0	19	95	0
Apprch %	19.2%	76.9%	3.8%			57.1%	33.3%	9.5%	3.8%		24.1%	69.0%	6.9%			42.1%	26.3%	31.6%				
Total %	5.3%	21.1%	1.1%		27.4%	12.6%	7.4%	2.1%		22.1%	7.4%	21.1%	2.1%		30.5%	8.4%	5.3%	6.3%		20.0%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-005 Forest Avenue-SR 68-David Avenue.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

AM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	1	0	0	1	1	2	1	0	4	0	1	0	0	1	0	0	0	0	0	6
08:00	0	3	0	0	3	3	1	1	0	5	1	1	0	0	2	0	0	0	0	0	10
08:15	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	7
08:30	0	2	0	0	2	2	0	0	0	2	1	3	0	0	4	2	0	2	0	4	12
Total Volume	0	9	0	0	9	6	4	2	0	12	2	6	0	0	8	2	1	3	0	6	35
% App Total	0.0%	100.0%	0.0%			50.0%	33.3%	16.7%	0.0%		25.0%	75.0%	0.0%			33.3%	16.7%	50.0%			
PHF	.000	.750	.000		.750	.500	.500	.500		.600	.500	.500	.000		.500	.250	.250	.375		.375	.729

PM PEAK HOUR	Forest Avenue-SR 68 Southbound					David Avenue Westbound					Forest Avenue-SR 68 Northbound					David Avenue Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	1	1	0	2	7
16:45	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
Total Volume	0	3	0	0	3	1	0	0	0	1	0	5	0	0	5	0	2	1	0	3	12
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%			0.0%	66.7%	33.3%			
PHF	.000	.375	.000		.375	.250	.000	.000		.250	.000	.417	.000		.417	.000	.500	.250		.375	.429

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	0	135	2	0	137	0	0	0	0	0	8	69	0	0	77	0	0	25	0	25	239	0
07:15	0	224	3	0	227	0	0	0	0	0	16	121	0	0	137	0	0	24	0	24	388	0
07:30	0	243	2	0	245	0	0	0	0	0	19	124	0	0	143	0	0	47	0	47	435	0
07:45	0	263	2	0	265	0	0	0	0	0	30	145	0	0	175	0	0	37	0	37	477	0
Total	0	865	9	0	874	0	0	0	0	0	73	459	0	0	532	0	0	133	0	133	1539	0
08:00	0	183	5	0	188	0	0	0	0	0	42	203	0	0	245	0	0	31	0	31	464	0
08:15	0	220	6	0	226	0	0	0	0	0	39	171	0	0	210	0	0	25	0	25	461	0
08:30	0	238	0	0	238	0	0	0	0	0	21	142	0	0	163	0	0	46	0	46	447	0
08:45	0	183	1	0	184	0	0	0	0	0	35	171	0	0	206	0	0	21	0	21	411	0
Total	0	824	12	0	836	0	0	0	0	0	137	687	0	0	824	0	0	123	0	123	1783	0
16:00	0	206	2	0	208	0	0	0	0	0	38	234	0	0	272	0	0	48	0	48	528	0
16:15	0	170	1	0	171	0	0	0	0	0	33	286	0	0	319	0	0	33	0	33	523	0
16:30	0	220	0	0	220	0	0	0	0	0	29	250	0	0	279	0	0	58	0	58	557	0
16:45	0	211	6	0	217	0	0	0	0	0	23	245	0	0	268	0	0	29	0	29	514	0
Total	0	807	9	0	816	0	0	0	0	0	123	1015	0	0	1138	0	0	168	0	168	2122	0
17:00	0	197	6	0	203	0	0	0	0	0	33	233	0	0	266	0	0	24	0	24	493	0
17:15	0	164	6	0	170	0	0	0	0	0	28	297	0	0	325	0	0	20	0	20	515	0
17:30	0	168	2	0	170	0	0	0	0	0	23	308	0	0	331	0	0	28	0	28	529	0
17:45	0	157	4	0	161	0	0	0	0	0	24	224	0	0	248	0	0	25	0	25	434	0
Total	0	686	18	0	704	0	0	0	0	0	108	1062	0	0	1170	0	0	97	0	97	1971	0
Grand Total	0	3182	48	0	3230	0	0	0	0	0	441	3223	0	0	3664	0	0	521	0	521	7415	0
Apprch %	0.0%	98.5%	1.5%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	12.0%	88.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	0.0%	42.9%	0.6%	0.0%	43.6%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	43.5%	0.0%	0.0%	49.4%	0.0%	0.0%	7.0%	0.0%	7.0%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	263	2	0	265	0	0	0	0	0	30	145	0	0	175	0	0	37	0	37	477
08:00	0	183	5	0	188	0	0	0	0	0	42	203	0	0	245	0	0	31	0	31	464
08:15	0	220	6	0	226	0	0	0	0	0	39	171	0	0	210	0	0	25	0	25	461
08:30	0	238	0	0	238	0	0	0	0	0	21	142	0	0	163	0	0	46	0	46	447
Total Volume	0	904	13	0	917	0	0	0	0	0	132	661	0	0	793	0	0	139	0	139	1849
% App Total	0.0%	98.6%	1.4%	0.0%		0.0%	0.0%	0.0%	0.0%		16.6%	83.4%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.859	.542	.000	.865	.000	.000	.000	.000	.000	.786	.814	.000	.000	.809	.000	.000	.755	.000	.755	.969

PM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	206	2	0	208	0	0	0	0	0	38	234	0	0	272	0	0	48	0	48	528
16:15	0	170	1	0	171	0	0	0	0	0	33	286	0	0	319	0	0	33	0	33	523
16:30	0	220	0	0	220	0	0	0	0	0	29	250	0	0	279	0	0	58	0	58	557
16:45	0	211	6	0	217	0	0	0	0	0	23	245	0	0	268	0	0	29	0	29	514
Total Volume	0	807	9	0	816	0	0	0	0	0	123	1015	0	0	1138	0	0	168	0	168	2122
% App Total	0.0%	98.9%	1.1%	0.0%		0.0%	0.0%	0.0%	0.0%		10.8%	89.2%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.917	.375	.000	.927	.000	.000	.000	.000	.000	.809	.887	.000	.000	.892	.000	.000	.724	.000	.724	.952

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Monterey County
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3	0
07:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3	0
07:30	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0
07:45	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
Total	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	11	0
08:00	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6	0
08:15	0	5	0	0	5	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	8	0
08:30	0	6	0	0	6	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	8	0
08:45	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	0
Total	0	16	0	0	16	0	0	0	0	0	2	8	0	0	10	0	0	0	0	0	26	0
16:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3	0
16:15	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	5	0
16:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	0	2	0	2	10	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	6	0
Total	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7	0
Grand Total	0	28	0	0	28	0	0	0	0	0	2	21	0	0	23	0	0	3	0	3	54	0
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			8.7%	91.3%	0.0%			0.0%	0.0%	100.0%				
Total %	0.0%	51.9%	0.0%		51.9%	0.0%	0.0%	0.0%		0.0%	3.7%	38.9%	0.0%		42.6%	0.0%	0.0%	5.6%		5.6%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-008 SR 68-Morse Drive.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

AM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 07:45 to 08:45																						
Peak Hour For Entire Intersection Begins at 07:45																						
07:45	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
08:00	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6
08:15	0	5	0	0	5	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	8
08:30	0	6	0	0	6	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	8
Total Volume	0	15	0	0	15	0	0	0	0	0	2	7	0	0	9	0	0	0	0	0	0	24
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			22.2%	77.8%	0.0%			0.0%	0.0%	0.0%				
PHF	.000	.625	.000		.625	.000	.000	.000		.000	.500	.583	.000		.750	.000	.000	.000		.000	.000	.750

PM PEAK HOUR	SR 68 Southbound					Westbound					SR 68 Northbound					Morse Drive Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
16:15	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	5
16:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	0	2	0	2	10
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			
PHF	.000	.500	.000		.500	.000	.000	.000		.000	.500	.000		.500	.000	.000	.000	.500		.500	.500

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	2	6	0	0	8	1	17	9	0	27	0	3	3	0	6	1	19	0	0	20	61	0
07:15	2	2	0	0	4	2	16	17	0	35	0	2	5	0	7	2	24	0	0	26	72	0
07:30	2	3	0	0	5	3	21	21	0	45	0	4	4	0	8	1	31	0	0	32	90	0
07:45	3	2	0	0	5	5	33	23	0	61	0	3	6	0	9	0	28	0	0	28	103	0
Total	9	13	0	0	22	11	87	70	0	168	0	12	18	0	30	4	102	0	0	106	326	0
08:00	4	2	0	0	6	2	31	9	0	42	1	3	5	0	9	1	30	3	0	34	91	0
08:15	2	0	1	0	3	3	35	9	0	47	0	7	13	0	20	1	35	0	0	36	106	0
08:30	4	4	1	0	9	4	37	13	0	54	0	4	8	0	12	0	40	0	0	40	115	0
08:45	5	2	0	0	7	3	33	6	0	42	0	11	5	0	16	2	30	1	0	33	98	0
Total	15	8	2	0	25	12	136	37	0	185	1	25	31	0	57	4	135	4	0	143	410	0
16:00	8	11	0	0	19	10	36	6	0	52	0	2	9	0	11	0	38	1	0	39	121	0
16:15	13	4	1	0	18	8	39	4	0	51	0	10	6	0	16	0	39	1	0	40	125	0
16:30	22	24	1	0	47	9	33	5	0	47	0	4	8	0	12	1	55	0	0	56	162	0
16:45	6	4	0	0	10	4	39	5	0	48	0	3	5	0	8	1	39	1	0	41	107	0
Total	49	43	2	0	94	31	147	20	0	198	0	19	28	0	47	2	171	3	0	176	515	0
17:00	6	5	1	0	12	10	46	8	0	64	0	2	9	0	11	0	36	0	0	36	123	0
17:15	5	10	0	0	15	5	43	10	0	58	0	0	6	0	6	1	32	0	0	33	112	0
17:30	11	7	0	0	18	6	39	5	0	50	0	5	5	0	10	0	28	0	0	28	106	0
17:45	5	8	1	0	14	3	44	5	0	52	0	3	6	0	9	0	32	0	0	32	107	0
Total	27	30	2	0	59	24	172	28	0	224	0	10	26	0	36	1	128	0	0	129	448	0
Grand Total	100	94	6	0	200	78	542	155	0	775	1	66	103	0	170	11	536	7	0	554	1699	0
Apprch %	50.0%	47.0%	3.0%	0.0%		10.1%	69.9%	20.0%	0.0%		0.6%	38.8%	60.6%	0.0%		2.0%	96.8%	1.3%	0.0%			
Total %	5.9%	5.5%	0.4%	0.0%	11.8%	4.6%	31.9%	9.1%	0.0%	45.6%	0.1%	3.9%	6.1%	0.0%	10.0%	0.6%	31.5%	0.4%	0.0%	32.6%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	3	2	0	0	5	5	33	23	0	61	0	3	6	0	9	0	28	0	0	28	103
08:00	4	2	0	0	6	2	31	9	0	42	1	3	5	0	9	1	30	3	0	34	91
08:15	2	0	1	0	3	3	35	9	0	47	0	7	13	0	20	1	35	0	0	36	106
08:30	4	4	1	0	9	4	37	13	0	54	0	4	8	0	12	0	40	0	0	40	115
Total Volume	13	8	2	0	23	14	136	54	0	204	1	17	32	0	50	2	133	3	0	138	415
% App Total	56.5%	34.8%	8.7%	0.0%		6.9%	66.7%	26.5%	0.0%		2.0%	34.0%	64.0%	0.0%		1.4%	96.4%	2.2%	0.0%		
PHF	.813	.500	.500	.000	.639	.700	.919	.587	.000	.836	.250	.607	.615	.000	.625	.500	.831	.250	.000	.863	.902

PM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	13	4	1	0	18	8	39	4	0	51	0	10	6	0	16	0	39	1	0	40	125
16:30	22	24	1	0	47	9	33	5	0	47	0	4	8	0	12	1	55	0	0	56	162
16:45	6	4	0	0	10	4	39	5	0	48	0	3	5	0	8	1	39	1	0	41	107
17:00	6	5	1	0	12	10	46	8	0	64	0	2	9	0	11	0	36	0	0	36	123
Total Volume	47	37	3	0	87	31	157	22	0	210	0	19	28	0	47	2	169	2	0	173	517
% App Total	54.0%	42.5%	3.4%	0.0%		14.8%	74.8%	10.5%	0.0%		0.0%	40.4%	59.6%	0.0%		1.2%	97.7%	1.2%	0.0%		
PHF	.534	.385	.750	.000	.463	.775	.853	.688	.000	.820	.000	.475	.778	.000	.734	.500	.768	.500	.000	.772	.798

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	1	2
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	1	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
Total	0	0	0	2	0	0	0	0	0	0	0	1	1	0	2	0	0	0	2	0	2	4
16:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	3	0
16:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	1
Total	1	0	0	1	1	1	0	0	0	1	0	0	1	1	1	0	2	0	0	2	5	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
17:30	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3	1
Grand Total	2	0	0	4	2	1	1	0	1	2	0	1	3	2	4	0	3	0	2	3	11	9
Apprch %	100.0%	0.0%	0.0%			50.0%	50.0%	0.0%			0.0%	25.0%	75.0%			0.0%	100.0%	0.0%				
Total %	18.2%	0.0%	0.0%		18.2%	9.1%	9.1%	0.0%		18.2%	0.0%	9.1%	27.3%		36.4%	0.0%	27.3%	0.0%		27.3%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd
 Date : 10/21/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 07:45 to 08:45																						
Peak Hour For Entire Intersection Begins at 07:45																						
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.250		.250	.000	.000	.000		.000		.250

PM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
% App Total	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF	.250	.000	.000		.250	.250	.000	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000		.250

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	Ped Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
07:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
07:15	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
07:45	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	1	2	0	0	3	0	0	2	0	2	0	0	0	0	0	5	0
08:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
08:15	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	3	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	4	0
16:00	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	5	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Grand Total	0	0	0	0	0	1	8	1	0	10	0	0	3	0	3	0	2	0	0	2	15	0
Apprch %	0.0%	0.0%	0.0%			10.0%	80.0%	10.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	6.7%	53.3%	6.7%		66.7%	0.0%	0.0%	20.0%		20.0%	0.0%	13.3%	0.0%		13.3%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-022 Congress Road-Forest Lodge Road.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

AM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 07:45 to 08:45																						
Peak Hour For Entire Intersection Begins at 07:45																						
07:45	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:15	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	0	3
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	0	5
% App Total	0.0%	0.0%	0.0%			25.0%	75.0%	0.0%	0.0%		0.0%	0.0%	100.0%			0.0%	0.0%	0.0%				
PHF	.000	.000	.000		.000	.250	.375	.000		.500	.000	.000	.250		.250	.000	.000	.000		.000	.417	

PM PEAK HOUR	Navajo Road Southbound					Forest Lodge Road Westbound					Congress Road Northbound					Forest Lodge Road Eastbound					Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL		
Peak Hour Analysis From 16:15 to 17:15																						
Peak Hour For Entire Intersection Begins at 16:15																						
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	2
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.000	.250	.000		.250	.250	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

START TIME	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total	Utum Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	13	0	3	0	16	0	5	7	0	12	0	0	0	0	0	0	12	0	0	12	40	0
07:15	12	0	1	0	13	0	14	8	0	22	0	0	0	0	0	0	11	0	0	11	46	0
07:30	18	0	2	0	20	0	8	9	0	17	0	0	0	0	0	0	28	0	0	28	65	0
07:45	16	0	4	0	20	0	20	16	0	36	0	0	0	0	0	3	21	0	0	24	80	0
Total	59	0	10	0	69	0	47	40	0	87	0	0	0	0	0	3	72	0	0	75	231	0
08:00	11	0	2	0	13	0	25	13	0	38	0	0	0	0	0	2	17	0	0	19	70	0
08:15	8	0	1	0	9	0	29	18	0	47	0	0	0	0	0	2	16	0	0	18	74	0
08:30	18	0	2	0	20	0	11	10	0	21	0	0	0	0	0	1	27	0	0	28	69	0
08:45	10	0	1	0	11	0	21	18	0	39	0	0	0	0	0	2	13	0	0	15	65	0
Total	47	0	6	0	53	0	86	59	0	145	0	0	0	0	0	7	73	0	0	80	278	0
16:00	28	0	6	0	34	0	18	18	0	36	0	0	0	0	0	6	23	0	0	29	99	0
16:15	11	0	4	0	15	0	23	17	0	40	0	0	0	0	0	5	15	0	0	20	75	0
16:30	35	0	5	0	40	0	15	16	0	31	0	0	0	0	0	3	22	0	0	25	96	0
16:45	12	0	0	0	12	0	22	10	0	32	0	0	0	0	0	3	13	0	0	16	60	0
Total	86	0	15	0	101	0	78	61	0	139	0	0	0	0	0	17	73	0	0	90	330	0
17:00	11	0	4	0	15	0	24	13	0	37	0	0	0	0	0	5	9	0	0	14	66	0
17:15	13	0	1	0	14	0	26	11	0	37	0	0	0	0	0	4	12	0	0	16	67	0
17:30	14	0	0	0	14	0	9	14	0	23	0	0	0	0	0	0	12	0	0	12	49	0
17:45	11	0	0	0	11	0	15	9	0	24	0	0	0	0	0	3	14	0	0	17	52	0
Total	49	0	5	0	54	0	74	47	0	121	0	0	0	0	0	12	47	0	0	59	234	0
Grand Total	241	0	36	0	277	0	285	207	0	492	0	0	0	0	0	39	265	0	0	304	1073	0
Apprch %	87.0%	0.0%	13.0%	0.0%		0.0%	57.9%	42.1%	0.0%		0.0%	0.0%	0.0%	0.0%		12.8%	87.2%	0.0%	0.0%			
Total %	22.5%	0.0%	3.4%	0.0%	25.8%	0.0%	26.6%	19.3%	0.0%	45.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	24.7%	0.0%	0.0%	28.3%	100.0%	

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	16	0	4	0	20	0	20	16	0	36	0	0	0	0	0	3	21	0	0	24	80
08:00	11	0	2	0	13	0	25	13	0	38	0	0	0	0	0	2	17	0	0	19	70
08:15	8	0	1	0	9	0	29	18	0	47	0	0	0	0	0	2	16	0	0	18	74
08:30	18	0	2	0	20	0	11	10	0	21	0	0	0	0	0	1	27	0	0	28	69
Total Volume	53	0	9	0	62	0	85	57	0	142	0	0	0	0	0	8	81	0	0	89	293
% App Total	85.5%	0.0%	14.5%	0.0%		0.0%	59.9%	40.1%	0.0%		0.0%	0.0%	0.0%	0.0%		9.0%	91.0%	0.0%	0.0%		
PHF	.736	.000	.563	.000	.775	.000	.733	.792	.000	.755	.000	.000	.000	.000	.000	.667	.750	.000	.000	.795	.916

PM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	28	0	6	0	34	0	18	18	0	36	0	0	0	0	0	6	23	0	0	29	99
16:15	11	0	4	0	15	0	23	17	0	40	0	0	0	0	0	5	15	0	0	20	75
16:30	35	0	5	0	40	0	15	16	0	31	0	0	0	0	0	3	22	0	0	25	96
16:45	12	0	0	0	12	0	22	10	0	32	0	0	0	0	0	3	13	0	0	16	60
Total Volume	86	0	15	0	101	0	78	61	0	139	0	0	0	0	0	17	73	0	0	90	330
% App Total	85.1%	0.0%	14.9%	0.0%		0.0%	56.1%	43.9%	0.0%		0.0%	0.0%	0.0%	0.0%		18.9%	81.1%	0.0%	0.0%		
PHF	.614	.000	.625	.000	.631	.000	.848	.847	.000	.869	.000	.000	.000	.000	.000	.708	.793	.000	.000	.776	.833

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

START TIME	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total	Ped Total	
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL			
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
17:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Grand Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
Apprch %	0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			100.0%		
Total %	0.0%	0.0%	100.0%		100.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	100.0%		

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

Bank 2 Count = Heavy Trucks

START TIME	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total	Ped Total		
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL				
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	1	0	2	0
08:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0
Total	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	2	4	4	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0
16:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	2	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	1	0	2	0	0	2	0	2	0	0	0	0	0	2	1	0	0	3	7	7	0	
Apprch %	50.0%	0.0%	50.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			66.7%	33.3%	0.0%						
Total %	14.3%	0.0%	14.3%		28.6%	0.0%	0.0%	28.6%		28.6%	0.0%	0.0%	0.0%	0.0%	0.0%	28.6%	14.3%	0.0%		42.9%	100.0%			

ALL TRAFFIC DATA

Monterey County
 All Vehicles on Unshifted
 Peds & Bikes on Bank 1
 Heavy Trucks on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 14-7698-023 SFB-Morse Road-Congress Road.ppd

Date : 10/21/2014

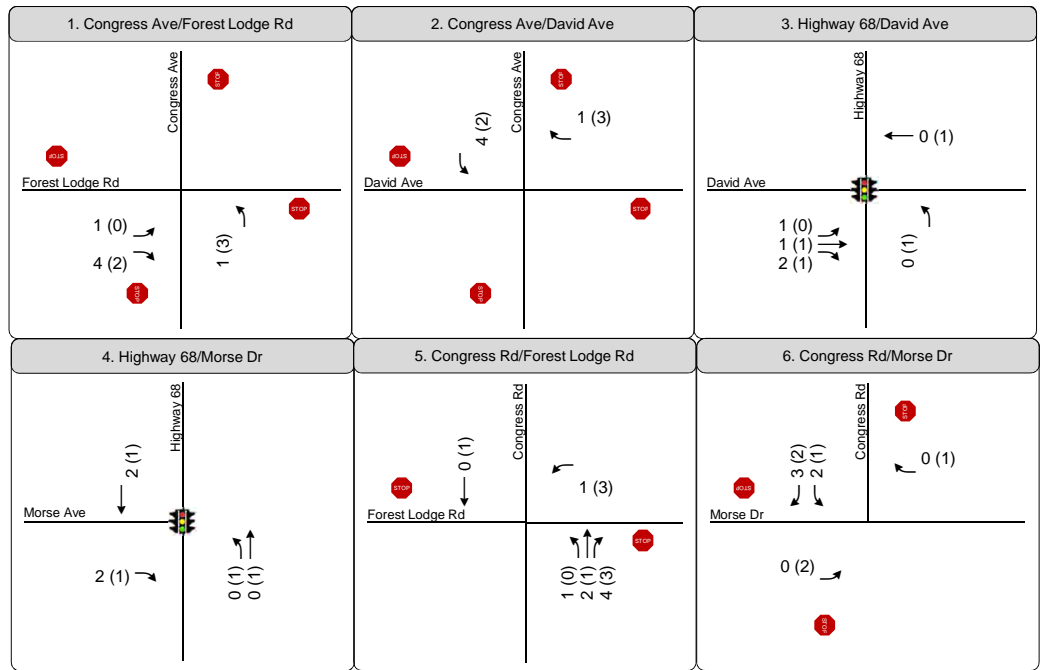
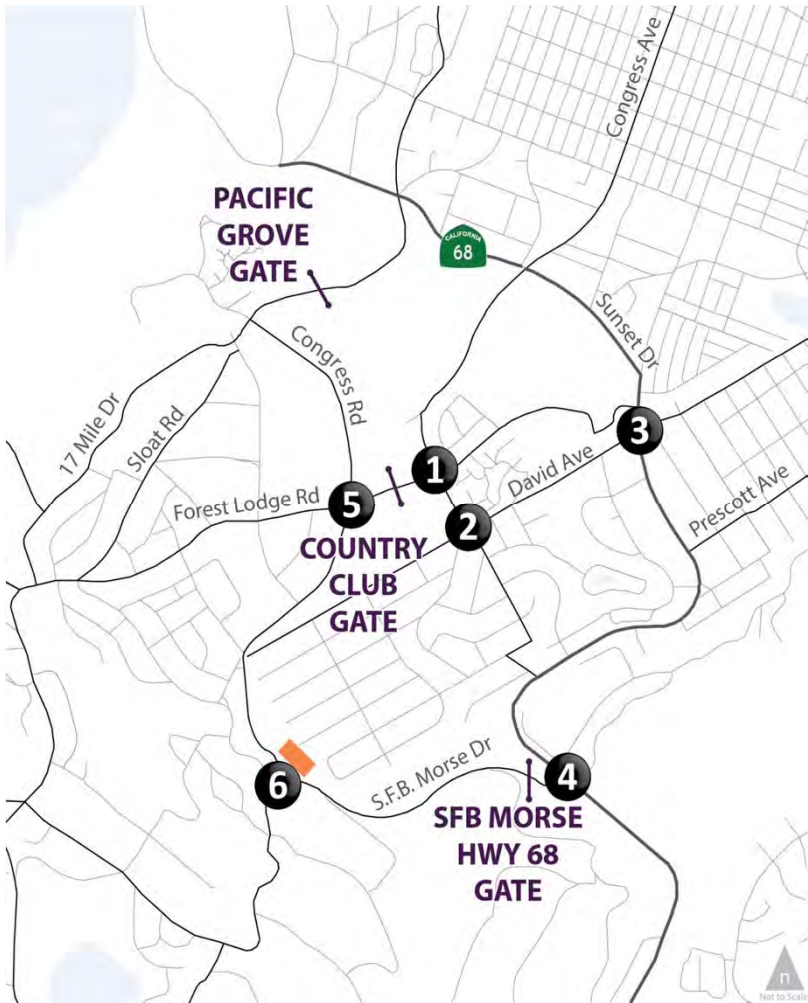
Bank 2 Count = Heavy Trucks

AM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	2
08:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	1	0	0	0	1	4
% App Total	0.0%	0.0%	100.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			
PHF	.000	.000	.250		.250	.000	.000	.500		.500	.000	.000	.000		.000	.250	.000	.000		.250	.500

PM PEAK HOUR	SFB Southbound					Morse Road Westbound					Northbound					Congress Road Eastbound					Total
	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
16:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
% App Total	100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.250	.000	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250	.000	.000		.250	.500

APPENDIX B: INTERSECTION TRAFFIC VOLUMES





LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes



Signalized Intersection



Stop Sign



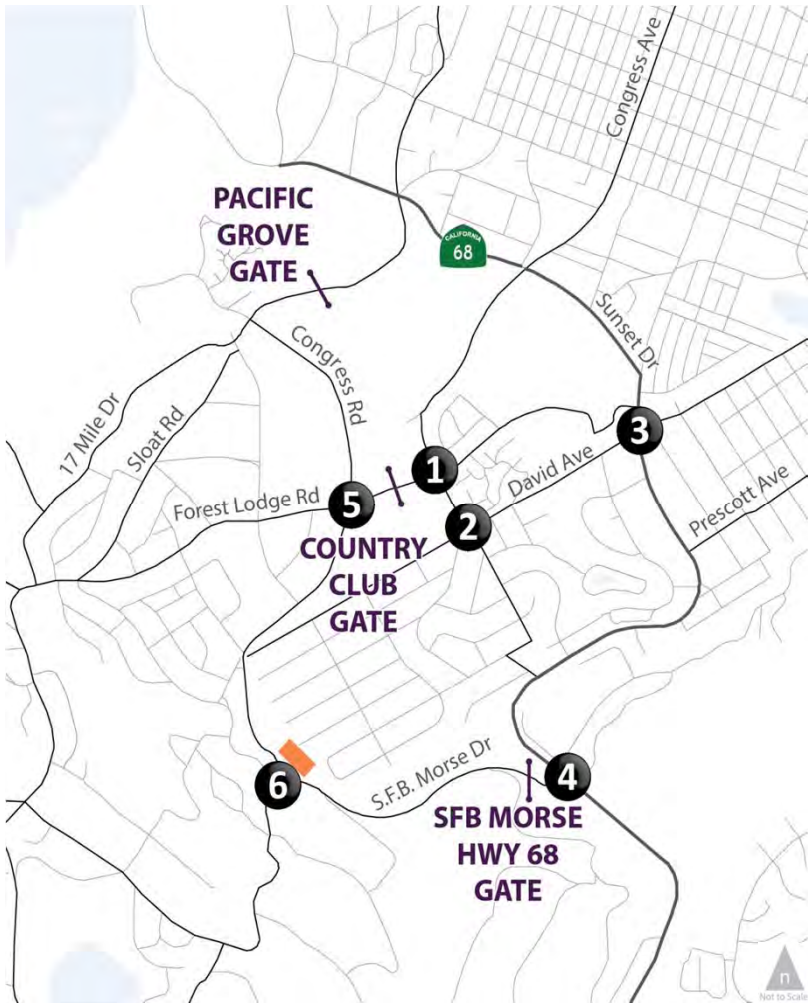
Study Intersection



Project Site

Figure B-1
Peak Hour Traffic Volumes and Lane Configurations
Project Trip Assignment





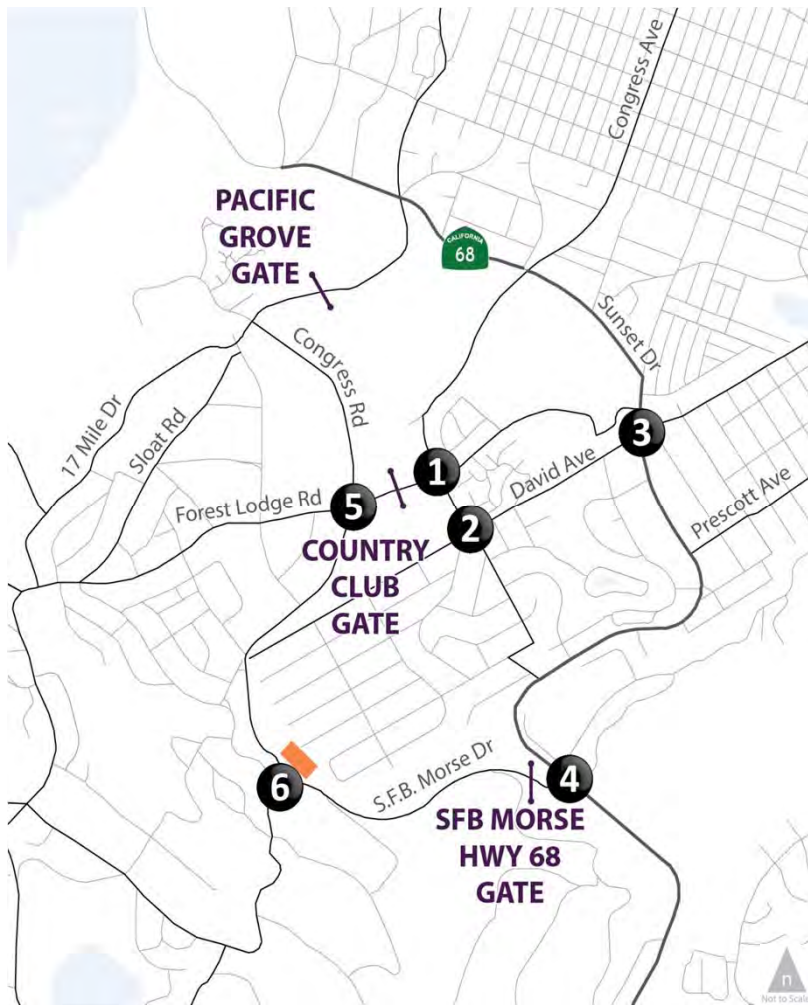
1. Congress Ave/Forest Lodge Rd	2. Congress Ave/David Ave	3. Highway 68/David Ave
<p>Forest Lodge Rd</p> <p>37 (36) 185 (156) 25 (45)</p> <p>55 (45) 35 (37) 100 (167)</p> <p>Congress Ave</p> <p>38 (59) 25 (31) 58 (37)</p> <p>126 (134) 182 (191) 55 (51)</p>	<p>David Ave</p> <p>50 (55) 150 (145) 108 (163)</p> <p>93 (56) 135 (76) 45 (10)</p> <p>Congress Ave</p> <p>131 (193) 99 (108) 20 (49)</p> <p>76 (12) 155 (137) 51 (47)</p>	<p>David Ave</p> <p>55 (62) 377 (433) 59 (70)</p> <p>125 (85) 134 (134) 88 (116)</p> <p>Highway 68</p> <p>47 (56) 138 (150) 77 (102)</p> <p>79 (173) 265 (548) 38 (105)</p>
4. Highway 68/Morse Ave	5. Congress Rd/Forest Lodge Rd	6. Congress Rd/Morse Dr
<p>Morse Ave</p> <p>13 (9) 906 (808)</p> <p>141 (169)</p> <p>Highway 68</p> <p>132 (124) 661 (1,016)</p>	<p>Forest Lodge Rd</p> <p>2 (3) 8 (38) 13 (47)</p> <p>133 (169) 3 (2)</p> <p>Congress Rd</p> <p>54 (22) 136 (157) 15 (34)</p> <p>2 (0) 19 (20) 36 (31)</p>	<p>Morse Dr</p> <p>12 (17) 55 (87)</p> <p>8 (19) 81 (73)</p> <p>Congress Rd</p> <p>57 (62) 85 (78)</p>

LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure B-2
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project (2014) Conditions





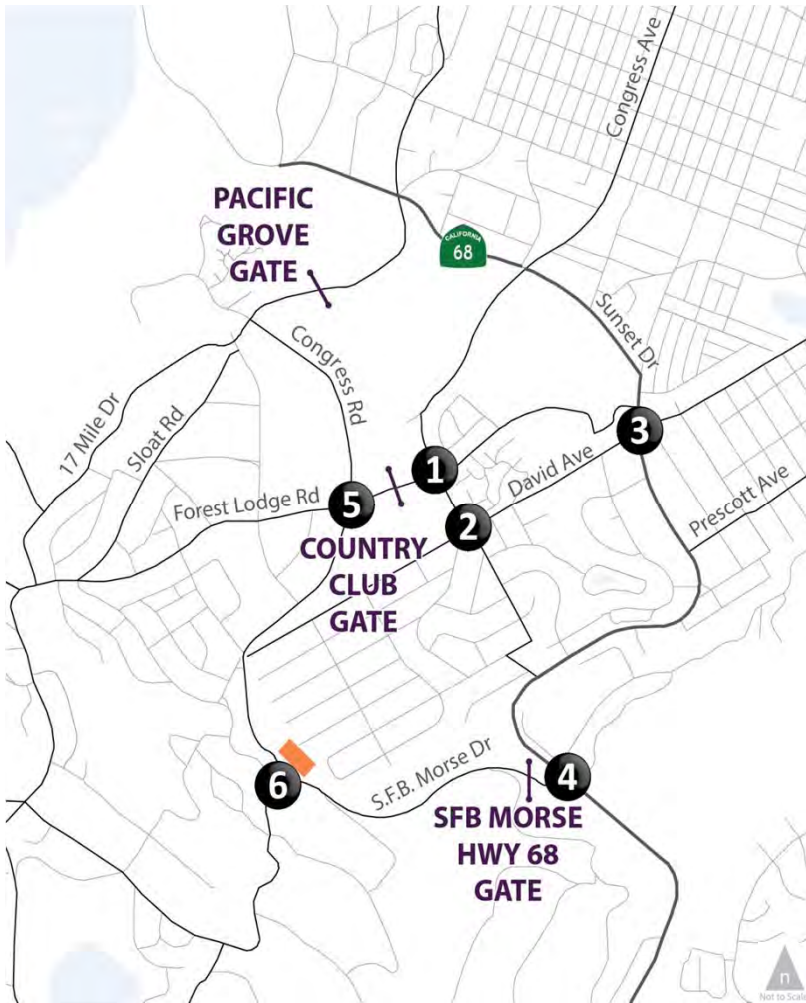
1. Congress Ave/Forest Lodge Rd	2. Congress Ave/David Ave	3. Highway 68/David Ave
<p>Forest Lodge Rd</p> <p>38 (38) 189 (159) 25 (46)</p> <p>Congress Ave</p> <p>39 (60) 25 (32) 59 (38)</p> <p>56 (47) 36 (38) 103 (171)</p> <p>129 (139) 186 (195) 56 (52)</p>	<p>David Ave</p> <p>51 (56) 153 (148) 112 (167)</p> <p>Congress Ave</p> <p>135 (199) 101 (110) 20 (50)</p> <p>95 (57) 138 (78) 46 (10)</p> <p>77 (12) 158 (140) 52 (48)</p>	<p>David Ave</p> <p>57 (65) 386 (443) 60 (71)</p> <p>Highway 68</p> <p>48 (57) 142 (155) 80 (104)</p> <p>128 (88) 138 (138) 89 (117)</p> <p>81 (176) 271 (561) 39 (108)</p>
4. Highway 68/Morse Ave	5. Congress Rd/Forest Lodge Rd	6. Congress Rd/Morse Dr
<p>Morse Ave</p> <p>13 (9) 925 (824)</p> <p>Highway 68</p> <p>147 (174)</p> <p>137 (130) 675 (1,038)</p>	<p>Forest Lodge Rd</p> <p>2 (3) 8 (38) 13 (48)</p> <p>Congress Rd</p> <p>55 (22) 140 (163) 15 (35)</p> <p>139 (174) 3 (2)</p> <p>1 (0) 17 (19) 36 (31)</p>	<p>Morse Dr</p> <p>10 (18) 54 (88)</p> <p>Congress Rd</p> <p>58 (62) 89 (85)</p> <p>11 (19) 88 (77)</p>

LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure B-3
Peak Hour Traffic Volumes and Lane Configurations
Near Term (2017) Conditions





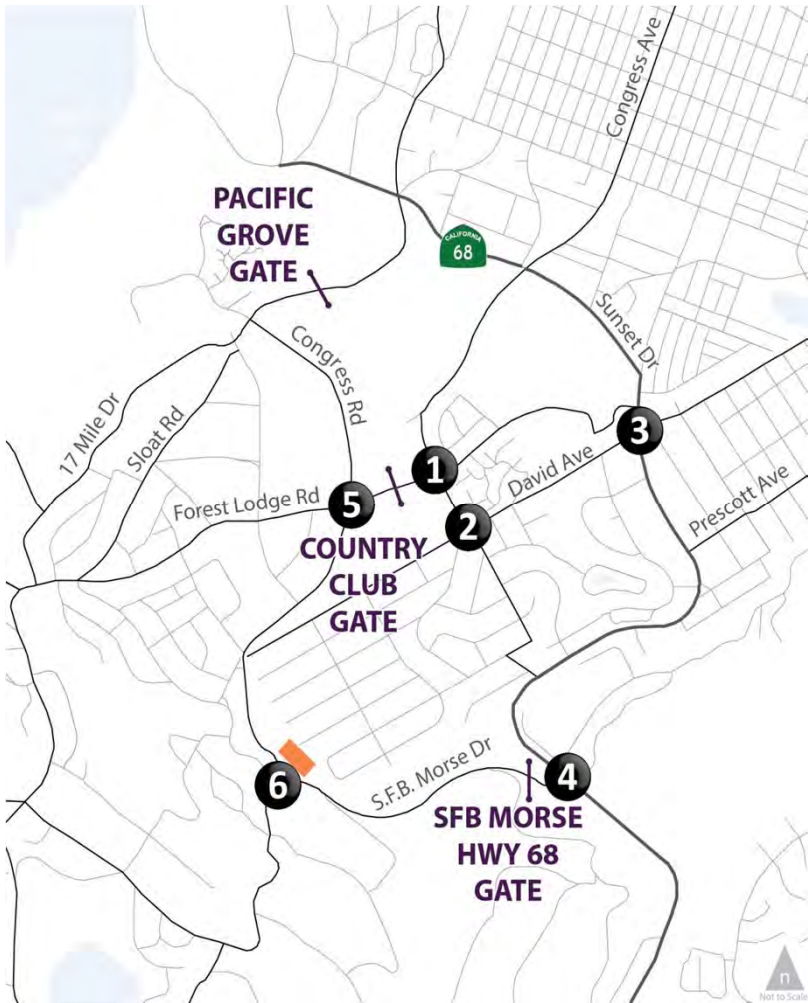
1. Congress Ave/Forest Lodge Rd	2. Congress Ave/David Ave	3. Highway 68/David Ave

LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure B-4
Peak Hour Traffic Volumes and Lane Configurations
Near Term Plus Project (2017) Conditions





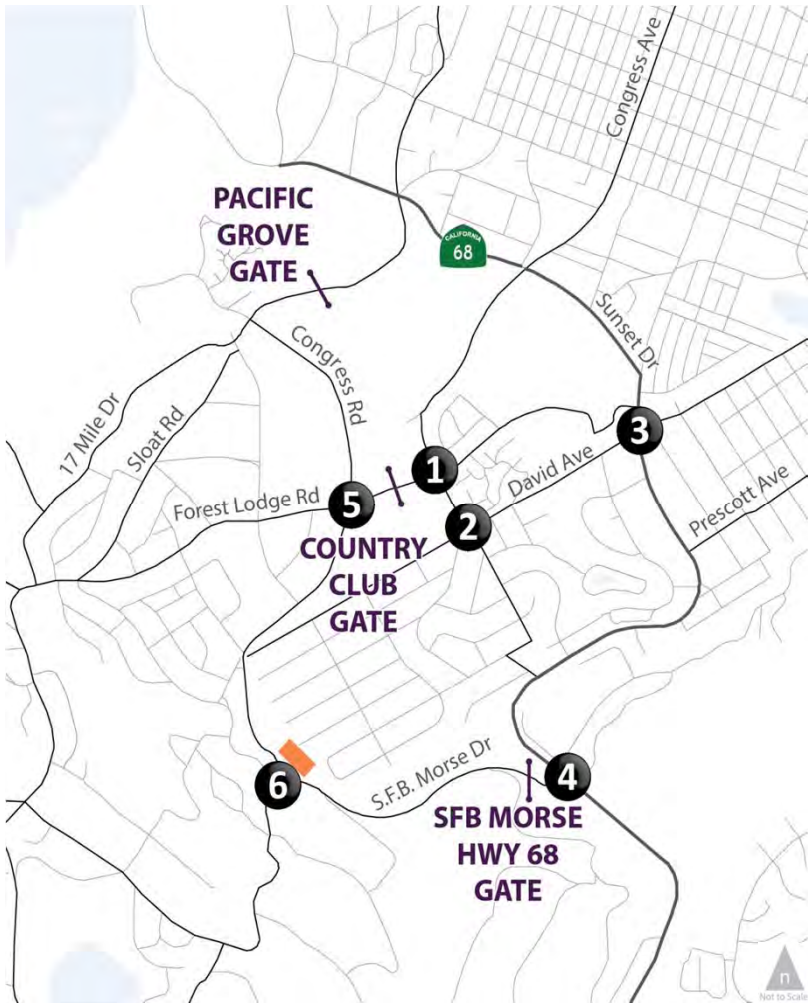
1. Congress Ave/Forest Lodge Rd	2. Congress Ave/David Ave	3. Highway 68/David Ave
<p>Forest Lodge Rd</p> <p>42 (42) 204 (173) 28 (50)</p> <p>Congress Ave</p> <p>42 (65) 28 (34) 64 (41)</p> <p>62 (51) 39 (41) 114 (189)</p> <p>141 (153) 201 (211) 61 (56)</p>	<p>David Ave</p> <p>55 (61) 166 (161) 124 (184)</p> <p>Congress Ave</p> <p>147 (218) 109 (120) 22 (54)</p> <p>103 (62) 149 (84) 50 (11)</p> <p>84 (13) 171 (152) 56 (52)</p>	<p>David Ave</p> <p>62 (72) 429 (502) 70 (87)</p> <p>Highway 68</p> <p>62 (69) 153 (169) 87 (115)</p> <p>140 (96) 151 (150) 96 (128)</p> <p>87 (191) 316 (622) 43 (118)</p>
4. Highway 68/Morse Ave	5. Congress Rd/Forest Lodge Rd	6. Congress Rd/Morse Dr
<p>Morse Ave</p> <p>14 (10) 1,013 (917)</p> <p>Highway 68</p> <p>161 (196)</p> <p>155 (145) 753 (1,140)</p>	<p>Forest Lodge Rd</p> <p>2 (3) 11 (47) 14 (52)</p> <p>Congress Rd</p> <p>60 (24) 152 (180) 16 (38)</p> <p>153 (191) 3 (2)</p> <p>1 (0) 26 (24) 39 (34)</p>	<p>Morse Dr</p> <p>11 (22) 61 (101)</p> <p>Congress Rd</p> <p>70 (71) 96 (92)</p> <p>13 (22) 94 (85)</p>

LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure B-5
Peak Hour Traffic Volumes and Lane Configurations
Cumulative (2030) Conditions





1. Congress Ave/Forest Lodge Rd	2. Congress Ave/David Ave	3. Highway 68/David Ave
4. Highway 68/Morse Ave	5. Congress Rd/Forest Lodge Rd	6. Congress Rd/Morse Dr

LEGEND

- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Study Intersection
- Project Site

Figure B-6
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project (2030) Conditions



APPENDIX C: INTERSECTION LOS CALCULATION WORKSHEETS



HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↕			↖	↗
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	54	35	96	58	25	38	125	182	55	25	185	37
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	70	45	125	75	32	49	162	236	71	32	240	48

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	116	125	108	49	470	273	48
Volume Left (vph)	70	0	75	0	162	32	0
Volume Right (vph)	0	125	0	49	71	0	48
Hadj (s)	0.16	-0.57	0.38	-0.67	0.01	0.06	-0.57
Departure Headway (s)	6.6	3.2	7.1	6.1	5.3	5.6	3.2
Degree Utilization, x	0.21	0.11	0.21	0.08	0.69	0.42	0.04
Capacity (veh/h)	474	1121	446	521	660	606	1121
Control Delay (s)	11.3	6.6	10.9	8.4	18.9	12.6	6.3
Approach Delay (s)	8.9		10.1		18.9	11.7	
Approach LOS	A		B		C	B	

Intersection Summary	
Delay	13.8
Level of Service	B
Intersection Capacity Utilization	52.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	93	135	45	20	99	130	76	155	51	105	150	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	112	163	54	24	119	157	92	187	61	127	181	60

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	329	143	157	340	367
Volume Left (vph)	112	24	0	92	127
Volume Right (vph)	54	0	157	61	60
Hadj (s)	0.00	0.07	-0.57	-0.02	0.00
Departure Headway (s)	6.5	7.1	3.2	6.3	6.3
Degree Utilization, x	0.60	0.28	0.14	0.60	0.64
Capacity (veh/h)	506	414	1121	529	530
Control Delay (s)	18.7	12.9	6.7	18.3	20.0
Approach Delay (s)	18.7	9.7		18.3	20.0
Approach LOS	C	A		C	C

Intersection Summary				
Delay			16.9	
Level of Service			C	
Intersection Capacity Utilization		53.1%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	133	86	77	138	47	79	265	38	59	377	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1739		1770	1792		1770	3459		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1739		1770	1792		1770	3459		1770	3539	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	136	146	95	85	152	52	87	291	42	65	414	60
RTOR Reduction (vph)	0	17	0	0	9	0	0	11	0	0	0	47
Lane Group Flow (vph)	136	224	0	85	195	0	87	322	0	65	414	13
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	15.3	15.3		14.0	14.0		6.9	14.5		6.2	13.8	13.8
Effective Green, g (s)	15.5	15.5		14.2	14.2		6.6	15.1		5.9	14.4	14.4
Actuated g/C Ratio	0.23	0.23		0.21	0.21		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	411	404		376	381		175	783		156	764	333
v/s Ratio Prot	0.08	c0.13		0.05	c0.11		c0.05	0.09		0.04	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.33	0.55		0.23	0.51		0.50	0.41		0.42	0.54	0.04
Uniform Delay, d1	21.3	22.6		21.7	23.2		28.5	22.0		28.8	23.2	20.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3		0.2	0.9		0.8	0.3		0.7	0.4	0.0
Delay (s)	21.6	23.9		21.9	24.0		29.3	22.3		29.4	23.6	20.7
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		23.1			23.4			23.7			24.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

11/17/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↕	↕↗	
Volume (vph)	0	139	132	661	904	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	143	136	681	932	13
RTOR Reduction (vph)	0	111	0	0	1	0
Lane Group Flow (vph)	0	32	136	681	944	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.8	7.8	33.1	16.7	
Effective Green, g (s)		7.5	7.5	33.1	17.6	
Actuated g/C Ratio		0.23	0.23	1.00	0.53	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		365	401	1863	1878	
v/s Ratio Prot		0.02	0.08	c0.37	c0.27	
v/s Ratio Perm						
v/c Ratio		0.09	0.34	0.37	0.50	
Uniform Delay, d1		10.1	10.7	0.0	5.0	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0	0.2	0.0	0.1	
Delay (s)		10.1	10.9	0.0	5.0	
Level of Service		B	B	A	A	
Approach Delay (s)	10.1			1.9	5.0	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	133	3	14	136	54	1	17	32	13	8	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	148	3	16	151	60	1	19	36	14	9	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	211			151			373	396	149	411	368	181
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	211			151			373	396	149	411	368	181
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	96	96	97	98	100
cM capacity (veh/h)	1359			1430			570	534	897	510	554	862

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	153	227	56	26
Volume Left	2	16	1	14
Volume Right	3	60	36	2
cSH	1359	1430	722	544
Volume to Capacity	0.00	0.01	0.08	0.05
Queue Length 95th (ft)	0	1	6	4
Control Delay (s)	0.1	0.6	10.4	11.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.6	10.4	11.9
Approach LOS			B	B

Intersection Summary			
Average Delay		2.3	
Intersection Capacity Utilization	33.5%		ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

11/17/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	8	81	85	57	53	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	88	92	62	58	10
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	97	154	67			
Volume Left (vph)	9	0	58			
Volume Right (vph)	0	62	10			
Hadj (s)	0.05	-0.21	0.12			
Departure Headway (s)	4.3	4.0	4.6			
Degree Utilization, x	0.11	0.17	0.09			
Capacity (veh/h)	822	889	745			
Control Delay (s)	7.8	7.8	8.0			
Approach Delay (s)	7.8	7.8	8.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.8			
Level of Service			A			
Intersection Capacity Utilization			21.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↕			↔	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	37	165	37	31	59	131	191	51	45	156	36
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	51	42	188	42	35	67	149	217	58	51	177	41

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	93	188	77	67	424	228	41
Volume Left (vph)	51	0	42	0	149	51	0
Volume Right (vph)	0	188	0	67	58	0	41
Hadj (s)	0.14	-0.57	0.31	-0.67	0.02	0.08	-0.57
Departure Headway (s)	6.1	3.2	6.7	5.7	5.0	5.3	3.2
Degree Utilization, x	0.16	0.17	0.14	0.11	0.59	0.34	0.04
Capacity (veh/h)	510	1121	480	564	692	639	1121
Control Delay (s)	10.3	6.8	9.6	8.2	14.8	11.0	6.3
Approach Delay (s)	8.0		8.9		14.8	10.3	
Approach LOS	A		A		B	B	

Intersection Summary	
Delay	11.2
Level of Service	B
Intersection Capacity Utilization	52.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	56	76	10	49	108	190	12	137	47	162	145	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	58	78	10	51	111	196	12	141	48	167	149	57
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	146	162	196	202	373							
Volume Left (vph)	58	51	0	12	167							
Volume Right (vph)	10	0	196	48	57							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.03							
Departure Headway (s)	5.8	5.8	3.2	5.3	5.2							
Degree Utilization, x	0.24	0.26	0.17	0.30	0.54							
Capacity (veh/h)	550	553	1121	617	662							
Control Delay (s)	10.6	10.9	6.9	10.5	14.0							
Approach Delay (s)	10.6	8.7		10.5	14.0							
Approach LOS	B	A		B	B							
Intersection Summary												
Delay			11.1									
Level of Service			B									
Intersection Capacity Utilization			55.5%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↕	↗
Volume (vph)	85	133	115	102	149	56	172	548	105	70	433	62
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1706		1770	1780		1770	3415		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1706		1770	1780		1770	3415		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	140	121	107	157	59	181	577	111	74	456	65
RTOR Reduction (vph)	0	23	0	0	11	0	0	13	0	0	0	50
Lane Group Flow (vph)	89	238	0	107	205	0	181	675	0	74	456	15
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	17.3	17.3		15.6	15.6		14.3	25.8		7.0	18.5	18.5
Effective Green, g (s)	17.5	17.5		15.8	15.8		14.0	26.4		6.7	19.1	19.1
Actuated g/C Ratio	0.21	0.21		0.19	0.19		0.17	0.32		0.08	0.23	0.23
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	375	362		339	341		300	1094		143	820	359
v/s Ratio Prot	0.05	c0.14		0.06	c0.12		c0.10	c0.20		0.04	0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.24	0.66		0.32	0.60		0.60	0.62		0.52	0.56	0.04
Uniform Delay, d1	26.9	29.7		28.6	30.4		31.6	23.7		36.3	27.9	24.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	3.8		0.4	2.5		2.3	0.9		1.3	0.5	0.0
Delay (s)	27.2	33.5		29.0	33.0		34.0	24.6		37.6	28.4	24.6
Level of Service	C	C		C	C		C	C		D	C	C
Approach Delay (s)		31.9			31.7			26.6			29.1	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.64	
Actuated Cycle Length (s)	82.4	Sum of lost time (s) 16.0
Intersection Capacity Utilization	61.1%	ICU Level of Service B
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

11/17/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑	↑↓	
Volume (vph)	0	168	123	1015	807	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3533	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	177	129	1068	849	9
RTOR Reduction (vph)	0	142	0	0	1	0
Lane Group Flow (vph)	0	35	129	1068	857	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.3	7.3	35.2	19.3	
Effective Green, g (s)		7.0	7.0	35.2	20.2	
Actuated g/C Ratio		0.20	0.20	1.00	0.57	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		320	351	1863	2027	
v/s Ratio Prot		0.02	0.07	c0.57	0.24	
v/s Ratio Perm						
v/c Ratio		0.11	0.37	0.57	0.42	
Uniform Delay, d1		11.5	12.2	0.0	4.2	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.2	0.3	0.1	
Delay (s)		11.6	12.4	0.3	4.3	
Level of Service		B	B	A	A	
Approach Delay (s)	11.6			1.6	4.3	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	169	2	31	157	22	0	19	28	47	37	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	2	211	2	39	196	28	0	24	35	59	46	4
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	225			215			533	521	214	553	508	211
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	225			215			533	521	214	553	508	211
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	95	96	85	90	100
cM capacity (veh/h)	1343			1354			409	445	826	397	453	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	216	262	59	109
Volume Left	2	39	0	59
Volume Right	2	28	35	4
cSH	1343	1354	614	427
Volume to Capacity	0.00	0.03	0.10	0.25
Queue Length 95th (ft)	0	2	8	25
Control Delay (s)	0.1	1.4	11.5	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	0.1	1.4	11.5	16.3
Approach LOS			B	C

Intersection Summary			
Average Delay		4.4	
Intersection Capacity Utilization	42.1%		ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

11/17/2014






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	17	73	78	61	86	15
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	20	88	94	73	104	18
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	108	167	122			
Volume Left (vph)	20	0	104			
Volume Right (vph)	0	73	18			
Hadj (s)	0.07	-0.23	0.12			
Departure Headway (s)	4.4	4.1	4.6			
Degree Utilization, x	0.13	0.19	0.16			
Capacity (veh/h)	780	841	735			
Control Delay (s)	8.1	8.1	8.5			
Approach Delay (s)	8.1	8.1	8.5			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.2			
Level of Service			A			
Intersection Capacity Utilization			28.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

11/17/2014

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Sign Control		Stop			Stop			Stop				Stop			
Volume (vph)	54	35	98	58	25	38	128	182	55	25	185	37			
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77			
Hourly flow rate (vph)	70	45	127	75	32	49	166	236	71	32	240	48			
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2								
Volume Total (vph)	116	127	108	49	474	273	48								
Volume Left (vph)	70	0	75	0	166	32	0								
Volume Right (vph)	0	127	0	49	71	0	48								
Hadj (s)	0.16	-0.57	0.38	-0.67	0.01	0.06	-0.57								
Departure Headway (s)	6.6	3.2	7.1	6.1	5.3	5.6	3.2								
Degree Utilization, x	0.21	0.11	0.21	0.08	0.69	0.42	0.04								
Capacity (veh/h)	473	1121	445	519	660	605	1121								
Control Delay (s)	11.3	6.6	10.9	8.4	19.2	12.7	6.3								
Approach Delay (s)	8.9		10.1		19.2	11.7									
Approach LOS	A		B		C	B									
Intersection Summary															
Delay			13.9												
Level of Service			B												
Intersection Capacity Utilization			52.7%				ICU Level of Service				A				
Analysis Period (min)			15												

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	93	135	45	20	99	133	76	155	51	108	150	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	112	163	54	24	119	160	92	187	61	130	181	60
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	329	143	160	340	371							
Volume Left (vph)	112	24	0	92	130							
Volume Right (vph)	54	0	160	61	60							
Hadj (s)	0.00	0.07	-0.57	-0.02	0.01							
Departure Headway (s)	6.5	7.2	3.2	6.4	6.3							
Degree Utilization, x	0.60	0.28	0.14	0.60	0.65							
Capacity (veh/h)	505	413	1121	528	530							
Control Delay (s)	18.8	13.0	6.7	18.4	20.3							
Approach Delay (s)	18.8	9.7		18.4	20.3							
Approach LOS	C	A		C	C							
Intersection Summary												
Delay			17.0									
Level of Service			C									
Intersection Capacity Utilization			53.5%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	134	87	77	139	47	80	265	38	59	377	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1738		1770	1792		1770	3459		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1738		1770	1792		1770	3459		1770	3539	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	136	147	96	85	153	52	88	291	42	65	414	60
RTOR Reduction (vph)	0	17	0	0	9	0	0	11	0	0	0	47
Lane Group Flow (vph)	136	226	0	85	196	0	88	322	0	65	414	13
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	15.4	15.4		14.0	14.0		6.9	14.6		6.2	13.9	13.9
Effective Green, g (s)	15.6	15.6		14.2	14.2		6.6	15.2		5.9	14.5	14.5
Actuated g/C Ratio	0.23	0.23		0.21	0.21		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	412	405		375	380		174	785		156	767	335
v/s Ratio Prot	0.08	c0.13		0.05	c0.11		c0.05	0.09		0.04	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.33	0.56		0.23	0.51		0.51	0.41		0.42	0.54	0.04
Uniform Delay, d1	21.3	22.6		21.8	23.3		28.6	22.0		28.9	23.2	20.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3		0.2	0.9		0.8	0.3		0.7	0.4	0.0
Delay (s)	21.7	24.0		22.0	24.2		29.4	22.3		29.5	23.6	20.7
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		23.1			23.6			23.8			24.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

11/17/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	140	133	662	905	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	144	137	682	933	13
RTOR Reduction (vph)	0	112	0	0	1	0
Lane Group Flow (vph)	0	32	137	682	945	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.7	7.7	33.1	16.8	
Effective Green, g (s)		7.4	7.4	33.1	17.7	
Actuated g/C Ratio		0.22	0.22	1.00	0.53	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		360	395	1863	1888	
v/s Ratio Prot		0.02	0.08	c0.37	c0.27	
v/s Ratio Perm						
v/c Ratio		0.09	0.35	0.37	0.50	
Uniform Delay, d1		10.2	10.8	0.0	4.9	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0	0.2	0.0	0.1	
Delay (s)		10.2	11.0	0.0	5.0	
Level of Service		B	B	A	A	
Approach Delay (s)	10.2			1.9	5.0	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	133	3	17	136	54	1	18	35	13	9	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	148	3	19	151	60	1	20	39	14	10	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	211			151			380	403	149	422	374	181
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	211			151			380	403	149	422	374	181
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	96	96	97	98	100
cM capacity (veh/h)	1359			1430			562	528	897	498	548	862

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	153	230	60	27
Volume Left	2	19	1	14
Volume Right	3	60	39	2
cSH	1359	1430	721	535
Volume to Capacity	0.00	0.01	0.08	0.05
Queue Length 95th (ft)	0	1	7	4
Control Delay (s)	0.1	0.7	10.4	12.1
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.7	10.4	12.1
Approach LOS			B	B

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		35.5%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

11/17/2014























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	10	81	85	58	54	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	88	92	63	59	12
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	99	155	71			
Volume Left (vph)	11	0	59			
Volume Right (vph)	0	63	12			
Hadj (s)	0.06	-0.21	0.10			
Departure Headway (s)	4.3	4.0	4.5			
Degree Utilization, x	0.12	0.17	0.09			
Capacity (veh/h)	819	887	747			
Control Delay (s)	7.8	7.8	8.0			
Approach Delay (s)	7.8	7.8	8.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.8			
Level of Service			A			
Intersection Capacity Utilization			23.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

11/17/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	46	37	169	37	31	59	132	191	51	45	156	36
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	52	42	192	42	35	67	150	217	58	51	177	41
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	94	192	77	67	425	228	41					
Volume Left (vph)	52	0	42	0	150	51	0					
Volume Right (vph)	0	192	0	67	58	0	41					
Hadj (s)	0.14	-0.57	0.31	-0.67	0.02	0.08	-0.57					
Departure Headway (s)	6.2	3.2	6.7	5.7	5.0	5.3	3.2					
Degree Utilization, x	0.16	0.17	0.14	0.11	0.59	0.34	0.04					
Capacity (veh/h)	510	1121	480	563	692	638	1121					
Control Delay (s)	10.3	6.9	9.6	8.2	14.9	11.0	6.3					
Approach Delay (s)	8.0		8.9		14.9	10.3						
Approach LOS	A		A		B	B						
Intersection Summary												
Delay			11.3									
Level of Service			B									
Intersection Capacity Utilization			52.7%		ICU Level of Service			A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	56	76	10	49	108	191	12	137	47	166	145	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	58	78	10	51	111	197	12	141	48	171	149	57
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	146	162	197	202	377							
Volume Left (vph)	58	51	0	12	171							
Volume Right (vph)	10	0	197	48	57							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.03							
Departure Headway (s)	5.8	5.8	3.2	5.3	5.2							
Degree Utilization, x	0.24	0.26	0.18	0.30	0.54							
Capacity (veh/h)	548	551	1121	616	662							
Control Delay (s)	10.6	10.9	6.9	10.6	14.2							
Approach Delay (s)	10.6	8.7		10.6	14.2							
Approach LOS	B	A		B	B							
Intersection Summary												
Delay			11.2									
Level of Service			B									
Intersection Capacity Utilization			55.8%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	↖
Volume (vph)	86	134	117	102	149	56	172	548	105	70	433	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1705		1770	1780		1770	3415		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1705		1770	1780		1770	3415		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	141	123	107	157	59	181	577	111	74	456	65
RTOR Reduction (vph)	0	23	0	0	11	0	0	13	0	0	0	50
Lane Group Flow (vph)	91	241	0	107	205	0	181	675	0	74	456	15
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	17.5	17.5		15.6	15.6		14.3	25.9		7.0	18.6	18.6
Effective Green, g (s)	17.7	17.7		15.8	15.8		14.0	26.5		6.7	19.2	19.2
Actuated g/C Ratio	0.21	0.21		0.19	0.19		0.17	0.32		0.08	0.23	0.23
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	378	364		338	340		299	1094		143	821	359
v/s Ratio Prot	0.05	c0.14		0.06	c0.12		c0.10	c0.20		0.04	0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.24	0.66		0.32	0.60		0.61	0.62		0.52	0.56	0.04
Uniform Delay, d1	26.9	29.8		28.8	30.6		31.8	23.8		36.4	28.0	24.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	4.0		0.4	2.6		2.4	0.9		1.3	0.5	0.0
Delay (s)	27.2	33.8		29.2	33.1		34.2	24.7		37.8	28.5	24.6
Level of Service	C	C		C	C		C	C		D	C	C
Approach Delay (s)		32.1			31.8			26.7			29.2	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

11/17/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	170	123	1015	809	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3533	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	179	129	1068	852	9
RTOR Reduction (vph)	0	143	0	0	1	0
Lane Group Flow (vph)	0	36	129	1068	860	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.3	7.3	35.2	19.3	
Effective Green, g (s)		7.0	7.0	35.2	20.2	
Actuated g/C Ratio		0.20	0.20	1.00	0.57	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		320	351	1863	2027	
v/s Ratio Prot		0.02	0.07	c0.57	0.24	
v/s Ratio Perm						
v/c Ratio		0.11	0.37	0.57	0.42	
Uniform Delay, d1		11.6	12.2	0.0	4.2	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.2	0.3	0.1	
Delay (s)		11.6	12.4	0.3	4.3	
Level of Service		B	B	A	A	
Approach Delay (s)	11.6			1.6	4.3	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

11/17/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	169	2	32	157	22	1	21	32	47	37	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	2	211	2	40	196	28	1	26	40	59	46	4
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	225			215			535	523	214	562	511	211
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	225			215			535	523	214	562	511	211
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	94	95	85	90	100
cM capacity (veh/h)	1343			1354			407	443	826	388	451	828
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	216	264	68	109								
Volume Left	2	40	1	59								
Volume Right	2	28	40	4								
cSH	1343	1354	610	420								
Volume to Capacity	0.00	0.03	0.11	0.26								
Queue Length 95th (ft)	0	2	9	26								
Control Delay (s)	0.1	1.4	11.6	16.5								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.1	1.4	11.6	16.5								
Approach LOS			B	C								
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			42.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 23: Congress Road & Morse Drive

11/17/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	17	73	78	61	88	18
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	20	88	94	73	106	22
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	108	167	128			
Volume Left (vph)	20	0	106			
Volume Right (vph)	0	73	22			
Hadj (s)	0.07	-0.23	0.10			
Departure Headway (s)	4.5	4.1	4.6			
Degree Utilization, x	0.13	0.19	0.16			
Capacity (veh/h)	776	837	738			
Control Delay (s)	8.2	8.1	8.5			
Approach Delay (s)	8.2	8.1	8.5			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.2			
Level of Service			A			
Intersection Capacity Utilization			28.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↕			↖	↗
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	56	36	103	59	25	39	129	186	56	25	189	38
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	73	47	134	77	32	51	168	242	73	32	245	49

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	119	134	109	51	482	278	49
Volume Left (vph)	73	0	77	0	168	32	0
Volume Right (vph)	0	134	0	51	73	0	49
Hadj (s)	0.16	-0.57	0.39	-0.67	0.01	0.06	-0.57
Departure Headway (s)	6.6	3.2	7.2	6.1	5.3	5.7	3.2
Degree Utilization, x	0.22	0.12	0.22	0.09	0.71	0.44	0.04
Capacity (veh/h)	468	1121	440	513	656	599	1121
Control Delay (s)	11.5	6.6	11.0	8.5	20.2	12.9	6.3
Approach Delay (s)	8.9		10.2		20.2	12.0	
Approach LOS	A		B		C	B	

Intersection Summary

Delay	14.3
Level of Service	B
Intersection Capacity Utilization	53.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	95	138	46	20	101	135	77	158	52	112	153	51
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	114	166	55	24	122	163	93	190	63	135	184	61
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	336	146	163	346	381							
Volume Left (vph)	114	24	0	93	135							
Volume Right (vph)	55	0	163	63	61							
Hadj (s)	0.00	0.07	-0.57	-0.02	0.01							
Departure Headway (s)	6.6	7.3	3.2	6.5	6.4							
Degree Utilization, x	0.62	0.30	0.14	0.62	0.68							
Capacity (veh/h)	499	403	1121	517	524							
Control Delay (s)	19.9	13.3	6.7	19.4	21.8							
Approach Delay (s)	19.9	9.8		19.4	21.8							
Approach LOS	C	A		C	C							
Intersection Summary												
Delay			18.0									
Level of Service			C									
Intersection Capacity Utilization			54.7%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	138	89	80	142	48	81	271	39	60	386	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1739		1770	1792		1770	3459		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1739		1770	1792		1770	3459		1770	3539	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	141	152	98	88	156	53	89	298	43	66	424	63
RTOR Reduction (vph)	0	17	0	0	9	0	0	11	0	0	0	49
Lane Group Flow (vph)	141	233	0	88	200	0	89	330	0	66	424	14
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	15.9	15.9		14.3	14.3		7.0	14.9		6.3	14.2	14.2
Effective Green, g (s)	16.1	16.1		14.5	14.5		6.7	15.5		6.0	14.8	14.8
Actuated g/C Ratio	0.24	0.24		0.21	0.21		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	418	411		376	381		174	787		155	769	335
v/s Ratio Prot	0.08	c0.13		0.05	c0.11		c0.05	0.10		0.04	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.34	0.57		0.23	0.52		0.51	0.42		0.43	0.55	0.04
Uniform Delay, d1	21.6	22.9		22.2	23.7		29.1	22.5		29.4	23.7	21.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.5		0.2	1.0		1.1	0.3		0.7	0.5	0.0
Delay (s)	21.9	24.4		22.4	24.7		30.2	22.7		30.1	24.2	21.1
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		23.5			24.1			24.3			24.5	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	147	137	675	925	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	152	141	696	954	13
RTOR Reduction (vph)	0	118	0	0	1	0
Lane Group Flow (vph)	0	34	141	696	966	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.8	7.8	33.2	16.8	
Effective Green, g (s)		7.5	7.5	33.2	17.7	
Actuated g/C Ratio		0.23	0.23	1.00	0.53	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		363	399	1863	1883	
v/s Ratio Prot		0.02	0.08	c0.37	c0.27	
v/s Ratio Perm						
v/c Ratio		0.09	0.35	0.37	0.51	
Uniform Delay, d1		10.2	10.8	0.0	5.0	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0	0.2	0.0	0.1	
Delay (s)		10.2	11.0	0.0	5.1	
Level of Service		B	B	A	A	
Approach Delay (s)	10.2			1.9	5.1	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	33.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	139	3	15	140	55	1	17	36	13	8	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	154	3	17	156	61	1	19	40	14	9	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	217			158			387	411	156	429	382	186
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217			158			387	411	156	429	382	186
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	96	96	97	98	100
cM capacity (veh/h)	1353			1422			558	524	890	493	544	856
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	160	233	60	26								
Volume Left	2	17	1	14								
Volume Right	3	61	40	2								
cSH	1353	1422	723	530								
Volume to Capacity	0.00	0.01	0.08	0.05								
Queue Length 95th (ft)	0	1	7	4								
Control Delay (s)	0.1	0.6	10.4	12.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.6	10.4	12.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			34.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	11	88	89	58	54	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	96	97	63	59	11
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	108	160	70			
Volume Left (vph)	12	0	59			
Volume Right (vph)	0	63	11			
Hadj (s)	0.06	-0.20	0.11			
Departure Headway (s)	4.3	4.0	4.6			
Degree Utilization, x	0.13	0.18	0.09			
Capacity (veh/h)	819	884	739			
Control Delay (s)	7.9	7.8	8.0			
Approach Delay (s)	7.9	7.8	8.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.9			
Level of Service			A			
Intersection Capacity Utilization			24.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	47	38	171	38	32	60	139	195	52	46	159	38
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	53	43	194	43	36	68	158	222	59	52	181	43
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	97	194	80	68	439	233	43					
Volume Left (vph)	53	0	43	0	158	52	0					
Volume Right (vph)	0	194	0	68	59	0	43					
Hadj (s)	0.14	-0.57	0.31	-0.67	0.03	0.08	-0.57					
Departure Headway (s)	6.2	3.2	6.7	5.8	5.0	5.4	3.2					
Degree Utilization, x	0.17	0.17	0.15	0.11	0.61	0.35	0.04					
Capacity (veh/h)	503	1121	475	555	688	631	1121					
Control Delay (s)	10.5	6.9	9.7	8.3	15.6	11.2	6.3					
Approach Delay (s)	8.1		9.0		15.6	10.4						
Approach LOS	A		A		C	B						
Intersection Summary												
Delay			11.6									
Level of Service			B									
Intersection Capacity Utilization			53.7%		ICU Level of Service		A					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	57	78	10	50	110	199	12	140	48	167	148	56
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	59	80	10	52	113	205	12	144	49	172	153	58
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	149	165	205	206	382							
Volume Left (vph)	59	52	0	12	172							
Volume Right (vph)	10	0	205	49	58							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.03							
Departure Headway (s)	5.9	5.9	3.2	5.4	5.2							
Degree Utilization, x	0.24	0.27	0.18	0.31	0.55							
Capacity (veh/h)	543	547	1121	611	658							
Control Delay (s)	10.8	11.0	6.9	10.7	14.5							
Approach Delay (s)	10.8	8.7		10.7	14.5							
Approach LOS	B	A		B	B							
Intersection Summary												
Delay			11.4									
Level of Service			B									
Intersection Capacity Utilization			56.4%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↕	↗
Volume (vph)	88	138	117	104	155	57	176	561	108	71	443	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1707		1770	1781		1770	3415		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1707		1770	1781		1770	3415		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	145	123	109	163	60	185	591	114	75	466	68
RTOR Reduction (vph)	0	22	0	0	11	0	0	13	0	0	0	52
Lane Group Flow (vph)	93	246	0	109	212	0	185	692	0	75	466	16
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	17.9	17.9		16.0	16.0		14.7	26.9		7.1	19.3	19.3
Effective Green, g (s)	18.1	18.1		16.2	16.2		14.4	27.5		6.8	19.9	19.9
Actuated g/C Ratio	0.21	0.21		0.19	0.19		0.17	0.33		0.08	0.24	0.24
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	378	365		338	341		301	1110		142	832	364
v/s Ratio Prot	0.05	c0.14		0.06	c0.12		c0.10	c0.20		0.04	0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.25	0.67		0.32	0.62		0.61	0.62		0.53	0.56	0.04
Uniform Delay, d1	27.6	30.5		29.5	31.4		32.5	24.2		37.4	28.5	25.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	4.4		0.4	3.1		2.6	1.0		1.6	0.5	0.0
Delay (s)	27.8	35.0		29.9	34.4		35.1	25.1		39.0	29.0	25.0
Level of Service	C	C		C	C		D	C		D	C	C
Approach Delay (s)		33.1			32.9			27.2			29.8	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	174	130	1038	824	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3533	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	183	137	1093	867	9
RTOR Reduction (vph)	0	146	0	0	1	0
Lane Group Flow (vph)	0	37	137	1093	875	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.5	7.5	35.4	19.3	
Effective Green, g (s)		7.2	7.2	35.4	20.2	
Actuated g/C Ratio		0.20	0.20	1.00	0.57	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		327	360	1863	2016	
v/s Ratio Prot		0.02	0.08	c0.59	0.25	
v/s Ratio Perm						
v/c Ratio		0.11	0.38	0.59	0.43	
Uniform Delay, d1		11.5	12.2	0.0	4.3	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.2	0.3	0.1	
Delay (s)		11.6	12.4	0.3	4.4	
Level of Service		B	B	A	A	
Approach Delay (s)	11.6			1.7	4.4	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	174	2	35	163	22	0	19	31	48	38	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	2	218	2	44	204	28	0	24	39	60	48	4
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232			221			557	544	220	580	532	218
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232			221			557	544	220	580	532	218
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	94	95	84	89	100
cM capacity (veh/h)	1334			1347			391	430	819	377	437	821

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	222	275	62	111
Volume Left	2	44	0	60
Volume Right	2	28	39	4
cSH	1334	1347	610	409
Volume to Capacity	0.00	0.03	0.10	0.27
Queue Length 95th (ft)	0	3	9	27
Control Delay (s)	0.1	1.5	11.6	17.1
Lane LOS	A	A	B	C
Approach Delay (s)	0.1	1.5	11.6	17.1
Approach LOS			B	C

Intersection Summary			
Average Delay		4.5	
Intersection Capacity Utilization	42.9%		ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 23: Congress Road & Morse Drive

12/1/2014






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↷	
Sign Control		Stop	Stop		Stop	
Volume (vph)	19	77	85	62	88	18
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	93	102	75	106	22
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	116	177	128			
Volume Left (vph)	23	0	106			
Volume Right (vph)	0	75	22			
Hadj (s)	0.07	-0.22	0.10			
Departure Headway (s)	4.5	4.1	4.6			
Degree Utilization, x	0.14	0.20	0.16			
Capacity (veh/h)	773	833	730			
Control Delay (s)	8.2	8.2	8.6			
Approach Delay (s)	8.2	8.2	8.6			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.3			
Level of Service			A			
Intersection Capacity Utilization			29.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	58	36	110	59	25	39	131	186	56	25	189	39
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	75	47	143	77	32	51	170	242	73	32	245	51
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	122	143	109	51	484	278	51					
Volume Left (vph)	75	0	77	0	170	32	0					
Volume Right (vph)	0	143	0	51	73	0	51					
Hadj (s)	0.16	-0.57	0.39	-0.67	0.01	0.06	-0.57					
Departure Headway (s)	6.7	3.2	7.2	6.2	5.3	5.7	3.2					
Degree Utilization, x	0.23	0.13	0.22	0.09	0.72	0.44	0.05					
Capacity (veh/h)	467	1121	439	511	654	597	1121					
Control Delay (s)	11.6	6.7	11.1	8.5	20.5	13.0	6.4					
Approach Delay (s)	8.9		10.3		20.5	12.0						
Approach LOS	A		B		C	B						
Intersection Summary												
Delay			14.4									
Level of Service			B									
Intersection Capacity Utilization			53.6%		ICU Level of Service		A					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	95	138	46	20	101	137	77	158	52	119	153	51
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	114	166	55	24	122	165	93	190	63	143	184	61
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	336	146	165	346	389							
Volume Left (vph)	114	24	0	93	143							
Volume Right (vph)	55	0	165	63	61							
Hadj (s)	0.00	0.07	-0.57	-0.02	0.01							
Departure Headway (s)	6.7	7.4	3.2	6.5	6.5							
Degree Utilization, x	0.63	0.30	0.15	0.63	0.70							
Capacity (veh/h)	494	396	1121	514	524							
Control Delay (s)	20.4	13.5	6.7	19.9	23.1							
Approach Delay (s)	20.4	9.9		19.9	23.1							
Approach LOS	C	A		C	C							
Intersection Summary												
Delay			18.7									
Level of Service			C									
Intersection Capacity Utilization			55.8%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	141	91	81	142	58	81	293	40	65	397	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1739		1770	1781		1770	3463		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1739		1770	1781		1770	3463		1770	3539	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	143	155	100	89	156	64	89	322	44	71	436	63
RTOR Reduction (vph)	0	17	0	0	11	0	0	10	0	0	0	49
Lane Group Flow (vph)	143	238	0	89	209	0	89	356	0	71	436	14
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	16.2	16.2		14.8	14.8		7.0	15.3		6.5	14.8	14.8
Effective Green, g (s)	16.4	16.4		15.0	15.0		6.7	15.9		6.2	15.4	15.4
Actuated g/C Ratio	0.24	0.24		0.22	0.22		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	417	410		382	384		170	792		157	784	342
v/s Ratio Prot	0.08	c0.14		0.05	c0.12		c0.05	0.10		0.04	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.34	0.58		0.23	0.54		0.52	0.45		0.45	0.56	0.04
Uniform Delay, d1	22.1	23.5		22.5	24.2		29.9	23.0		30.0	24.0	21.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.7		0.2	1.2		1.3	0.3		0.8	0.5	0.0
Delay (s)	22.4	25.2		22.7	25.5		31.2	23.3		30.8	24.5	21.3
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		24.2			24.7			24.9			24.9	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↑	↑↓	
Volume (vph)	0	152	144	697	939	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	157	148	719	968	13
RTOR Reduction (vph)	0	122	0	0	1	0
Lane Group Flow (vph)	0	35	148	719	980	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.8	7.8	33.4	17.0	
Effective Green, g (s)		7.5	7.5	33.4	17.9	
Actuated g/C Ratio		0.22	0.22	1.00	0.54	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		361	397	1863	1892	
v/s Ratio Prot		0.02	0.08	c0.39	c0.28	
v/s Ratio Perm						
v/c Ratio		0.10	0.37	0.39	0.52	
Uniform Delay, d1		10.3	11.0	0.0	5.0	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0	0.2	0.0	0.1	
Delay (s)		10.3	11.2	0.0	5.1	
Level of Service		B	B	A	A	
Approach Delay (s)	10.3			1.9	5.1	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	33.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	142	3	16	141	55	2	26	41	13	10	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	158	3	18	157	61	2	29	46	14	11	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	218			161			394	417	159	447	388	187
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			161			394	417	159	447	388	187
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	94	95	97	98	100
cM capacity (veh/h)	1352			1418			549	519	886	469	539	855

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	163	236	77	28
Volume Left	2	18	2	14
Volume Right	3	61	46	2
cSH	1352	1418	690	514
Volume to Capacity	0.00	0.01	0.11	0.05
Queue Length 95th (ft)	0	1	9	4
Control Delay (s)	0.1	0.7	10.9	12.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.7	10.9	12.4
Approach LOS			B	B

Intersection Summary			
Average Delay		2.7	
Intersection Capacity Utilization		35.4%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive




















12/1/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	12	88	89	65	58	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	96	97	71	63	14
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	109	167	77			
Volume Left (vph)	13	0	63			
Volume Right (vph)	0	71	14			
Hadj (s)	0.06	-0.22	0.09			
Departure Headway (s)	4.3	4.0	4.6			
Degree Utilization, x	0.13	0.19	0.10			
Capacity (veh/h)	812	882	739			
Control Delay (s)	8.0	7.9	8.1			
Approach Delay (s)	8.0	7.9	8.1			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.0			
Level of Service			A			
Intersection Capacity Utilization			25.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Congress Avenue & Forest Lodge Road

12/1/2014

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Sign Control		Stop			Stop			Stop			Stop				
Volume (vph)	47	38	176	38	32	60	145	195	52	46	159	39			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Hourly flow rate (vph)	53	43	200	43	36	68	165	222	59	52	181	44			
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2								
Volume Total (vph)	97	200	80	68	445	233	44								
Volume Left (vph)	53	0	43	0	165	52	0								
Volume Right (vph)	0	200	0	68	59	0	44								
Hadj (s)	0.14	-0.57	0.31	-0.67	0.03	0.08	-0.57								
Departure Headway (s)	6.2	3.2	6.8	5.8	5.0	5.4	3.2								
Degree Utilization, x	0.17	0.18	0.15	0.11	0.62	0.35	0.04								
Capacity (veh/h)	501	1121	472	553	688	630	1121								
Control Delay (s)	10.5	6.9	9.7	8.3	16.0	11.2	6.3								
Approach Delay (s)	8.1		9.1		16.0	10.4									
Approach LOS	A		A		C	B									
Intersection Summary															
Delay			11.8												
Level of Service			B												
Intersection Capacity Utilization			54.0%				ICU Level of Service				A				
Analysis Period (min)			15												

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	57	78	10	50	110	205	12	140	48	172	148	56
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	59	80	10	52	113	211	12	144	49	177	153	58
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	149	165	211	206	388							
Volume Left (vph)	59	52	0	12	177							
Volume Right (vph)	10	0	211	49	58							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.04							
Departure Headway (s)	5.9	5.9	3.2	5.4	5.2							
Degree Utilization, x	0.25	0.27	0.19	0.31	0.56							
Capacity (veh/h)	541	545	1121	609	657							
Control Delay (s)	10.8	11.1	6.9	10.7	14.7							
Approach Delay (s)	10.8	8.7		10.7	14.7							
Approach LOS	B	A		B	B							
Intersection Summary												
Delay			11.5									
Level of Service			B									
Intersection Capacity Utilization			56.7%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	140	119	106	157	64	177	574	109	80	465	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1707		1770	1775		1770	3416		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1707		1770	1775		1770	3416		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	94	147	125	112	165	67	186	604	115	84	489	69
RTOR Reduction (vph)	0	23	0	0	11	0	0	13	0	0	0	52
Lane Group Flow (vph)	94	249	0	112	221	0	186	706	0	84	489	17
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	18.4	18.4		16.6	16.6		14.8	27.9		7.5	20.6	20.6
Effective Green, g (s)	18.6	18.6		16.8	16.8		14.5	28.5		7.2	21.2	21.2
Actuated g/C Ratio	0.21	0.21		0.19	0.19		0.17	0.33		0.08	0.24	0.24
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	377	364		341	342		294	1117		146	861	377
v/s Ratio Prot	0.05	c0.15		0.06	c0.12		c0.11	c0.21		0.05	0.14	
v/s Ratio Perm												0.01
v/c Ratio	0.25	0.68		0.33	0.65		0.63	0.63		0.58	0.57	0.04
Uniform Delay, d1	28.5	31.5		30.3	32.4		33.8	24.9		38.5	28.9	25.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	4.8		0.4	3.7		3.2	1.0		3.4	0.5	0.0
Delay (s)	28.7	36.4		30.7	36.1		37.1	25.9		41.9	29.4	25.2
Level of Service	C	D		C	D		D	C		D	C	C
Approach Delay (s)		34.4			34.3			28.2			30.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	182	135	1052	847	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3533	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	192	142	1107	892	9
RTOR Reduction (vph)	0	153	0	0	1	0
Lane Group Flow (vph)	0	39	142	1107	900	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.5	7.5	35.5	19.4	
Effective Green, g (s)		7.2	7.2	35.5	20.3	
Actuated g/C Ratio		0.20	0.20	1.00	0.57	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		326	358	1863	2020	
v/s Ratio Prot		0.02	0.08	c0.59	0.25	
v/s Ratio Perm						
v/c Ratio		0.12	0.40	0.59	0.45	
Uniform Delay, d1		11.6	12.3	0.0	4.4	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.3	0.3	0.1	
Delay (s)		11.6	12.5	0.3	4.4	
Level of Service		B	B	A	A	
Approach Delay (s)	11.6			1.7	4.4	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	35.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	176	2	39	166	22	0	23	35	48	45	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	2	220	2	49	208	28	0	29	44	60	56	4
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	236			224			578	561	222	604	548	222
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	236			224			578	561	222	604	548	222
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			100	93	95	83	87	100
cM capacity (veh/h)	1330			1344			370	419	817	357	426	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	225	284	72	120
Volume Left	2	49	0	60
Volume Right	2	28	44	4
cSH	1330	1344	594	394
Volume to Capacity	0.00	0.04	0.12	0.30
Queue Length 95th (ft)	0	3	10	32
Control Delay (s)	0.1	1.6	11.9	18.1
Lane LOS	A	A	B	C
Approach Delay (s)	0.1	1.6	11.9	18.1
Approach LOS			B	C

Intersection Summary			
Average Delay		5.0	
Intersection Capacity Utilization	43.8%		ICU Level of Service
Analysis Period (min)	15		A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	22	78	86	66	95	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	27	94	104	80	114	27
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	120	183	141			
Volume Left (vph)	27	0	114			
Volume Right (vph)	0	80	27			
Hadj (s)	0.08	-0.23	0.08			
Departure Headway (s)	4.5	4.2	4.7			
Degree Utilization, x	0.15	0.21	0.18			
Capacity (veh/h)	764	823	727			
Control Delay (s)	8.3	8.3	8.7			
Approach Delay (s)	8.3	8.3	8.7			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.4			
Level of Service			A			
Intersection Capacity Utilization			30.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road


















12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	62	39	114	64	28	42	141	201	61	28	204	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	65	41	120	67	29	44	148	212	64	29	215	44
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	106	120	97	44	424	244	44					
Volume Left (vph)	65	0	67	0	148	29	0					
Volume Right (vph)	0	120	0	44	64	0	44					
Hadj (s)	0.16	-0.57	0.38	-0.67	0.01	0.06	-0.57					
Departure Headway (s)	6.2	3.2	6.8	5.8	5.1	5.4	3.2					
Degree Utilization, x	0.18	0.11	0.18	0.07	0.60	0.36	0.04					
Capacity (veh/h)	504	1121	467	552	681	632	1121					
Control Delay (s)	10.6	6.6	10.2	8.0	15.3	11.4	6.3					
Approach Delay (s)	8.5		9.5		15.3	10.6						
Approach LOS	A		A		C	B						
Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			56.6%		ICU Level of Service		B					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	103	149	50	22	109	147	84	171	56	124	166	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	108	157	53	23	115	155	88	180	59	131	175	58
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	318	138	155	327	363							
Volume Left (vph)	108	23	0	88	131							
Volume Right (vph)	53	0	155	59	58							
Hadj (s)	0.00	0.07	-0.57	-0.02	0.01							
Departure Headway (s)	6.4	7.0	3.2	6.2	6.2							
Degree Utilization, x	0.57	0.27	0.14	0.56	0.62							
Capacity (veh/h)	514	429	1121	538	541							
Control Delay (s)	17.4	12.5	6.7	16.9	18.7							
Approach Delay (s)	17.4	9.4		16.9	18.7							
Approach LOS	C	A		C	C							
Intersection Summary												
Delay			15.9									
Level of Service			C									
Intersection Capacity Utilization			58.4%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↕	↗
Volume (vph)	140	151	96	87	153	62	87	316	43	70	429	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1741		1770	1782		1770	3463		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1741		1770	1782		1770	3463		1770	3539	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	159	101	92	161	65	92	333	45	74	452	65
RTOR Reduction (vph)	0	17	0	0	11	0	0	10	0	0	0	50
Lane Group Flow (vph)	147	243	0	92	215	0	92	368	0	74	452	15
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	16.6	16.6		15.2	15.2		7.2	15.9		6.6	15.3	15.3
Effective Green, g (s)	16.8	16.8		15.4	15.4		6.9	16.5		6.3	15.9	15.9
Actuated g/C Ratio	0.24	0.24		0.22	0.22		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	418	411		383	386		172	804		157	792	346
v/s Ratio Prot	0.08	c0.14		0.05	c0.12		c0.05	0.11		0.04	c0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.35	0.59		0.24	0.56		0.53	0.46		0.47	0.57	0.04
Uniform Delay, d1	22.6	24.1		23.0	24.8		30.5	23.4		30.8	24.5	21.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.9		0.2	1.4		1.6	0.3		0.8	0.6	0.0
Delay (s)	22.9	26.0		23.2	26.2		32.1	23.7		31.6	25.1	21.6
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		24.9			25.3			25.4			25.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑	↑↓	
Volume (vph)	0	161	155	753	1013	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	169	163	793	1066	15
RTOR Reduction (vph)	0	121	0	0	2	0
Lane Group Flow (vph)	0	48	163	793	1079	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		8.2	8.2	36.0	19.2	
Effective Green, g (s)		7.9	7.9	36.0	20.1	
Actuated g/C Ratio		0.22	0.22	1.00	0.56	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		353	388	1863	1972	
v/s Ratio Prot		0.03	0.09	c0.43	c0.31	
v/s Ratio Perm						
v/c Ratio		0.14	0.42	0.43	0.55	
Uniform Delay, d1		11.3	12.1	0.0	5.1	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.3	0.1	0.2	
Delay (s)		11.4	12.3	0.1	5.2	
Level of Service		B	B	A	A	
Approach Delay (s)	11.4			2.2	5.2	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	153	3	16	152	60	1	26	39	14	11	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	161	3	17	160	63	1	27	41	15	12	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	223			164			400	424	163	447	394	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			164			400	424	163	447	394	192
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	95	95	97	98	100
cM capacity (veh/h)	1346			1414			544	515	882	473	535	850

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	166	240	69	28
Volume Left	2	17	1	15
Volume Right	3	63	41	2
cSH	1346	1414	684	514
Volume to Capacity	0.00	0.01	0.10	0.06
Queue Length 95th (ft)	0	1	8	4
Control Delay (s)	0.1	0.6	10.9	12.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.6	10.9	12.4
Approach LOS			B	B

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization	36.6%		ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	13	94	96	70	61	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	99	101	74	64	12
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	113	175	76			
Volume Left (vph)	14	0	64			
Volume Right (vph)	0	74	12			
Hadj (s)	0.06	-0.22	0.11			
Departure Headway (s)	4.3	4.0	4.6			
Degree Utilization, x	0.14	0.19	0.10			
Capacity (veh/h)	811	881	730			
Control Delay (s)	8.0	7.9	8.1			
Approach Delay (s)	8.0	7.9	8.1			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.0			
Level of Service			A			
Intersection Capacity Utilization			26.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↕			↖	↗
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	51	41	189	41	34	65	153	211	56	50	173	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	54	43	199	43	36	68	161	222	59	53	182	44

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	97	199	79	68	442	235	44
Volume Left (vph)	54	0	43	0	161	53	0
Volume Right (vph)	0	199	0	68	59	0	44
Hadj (s)	0.14	-0.57	0.31	-0.67	0.03	0.08	-0.57
Departure Headway (s)	6.2	3.2	6.8	5.8	5.0	5.4	3.2
Degree Utilization, x	0.17	0.18	0.15	0.11	0.62	0.35	0.04
Capacity (veh/h)	501	1121	472	553	687	631	1121
Control Delay (s)	10.5	6.9	9.7	8.3	15.8	11.2	6.3
Approach Delay (s)	8.1		9.1		15.8	10.5	
Approach LOS	A		A		C	B	

Intersection Summary

Delay	11.7
Level of Service	B
Intersection Capacity Utilization	56.8%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	62	84	11	54	120	218	13	152	52	184	161	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	65	88	12	57	126	229	14	160	55	194	169	64
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	165	183	229	228	427							
Volume Left (vph)	65	57	0	14	194							
Volume Right (vph)	12	0	229	55	64							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.03							
Departure Headway (s)	6.2	6.2	3.2	5.6	5.4							
Degree Utilization, x	0.29	0.32	0.20	0.36	0.65							
Capacity (veh/h)	502	515	1122	577	633							
Control Delay (s)	11.7	12.0	7.0	11.8	17.8							
Approach Delay (s)	11.7	9.2		11.8	17.8							
Approach LOS	B	A		B	C							
Intersection Summary												
Delay			13.0									
Level of Service			B									
Intersection Capacity Utilization			59.8%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	150	128	115	169	69	191	622	118	87	502	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1707		1770	1775		1770	3418		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1707		1770	1775		1770	3418		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	158	135	121	178	73	201	655	124	92	528	76
RTOR Reduction (vph)	0	23	0	0	11	0	0	13	0	0	0	57
Lane Group Flow (vph)	101	270	0	121	240	0	201	766	0	92	528	19
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	20.3	20.3		18.2	18.2		15.7	30.9		8.1	23.3	23.3
Effective Green, g (s)	20.5	20.5		18.4	18.4		15.4	31.5		7.8	23.9	23.9
Actuated g/C Ratio	0.22	0.22		0.20	0.20		0.16	0.33		0.08	0.25	0.25
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	385	371		345	346		289	1142		146	897	393
v/s Ratio Prot	0.06	c0.16		0.07	c0.14		c0.11	c0.22		0.05	0.15	
v/s Ratio Perm												0.01
v/c Ratio	0.26	0.73		0.35	0.69		0.70	0.67		0.63	0.59	0.05
Uniform Delay, d1	30.6	34.3		32.7	35.3		37.2	26.9		41.8	30.8	26.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	6.6		0.5	5.4		5.8	1.4		6.4	0.6	0.0
Delay (s)	30.8	40.8		33.2	40.7		42.9	28.3		48.2	31.5	26.6
Level of Service	C	D		C	D		D	C		D	C	C
Approach Delay (s)		38.3			38.3			31.3			33.1	
Approach LOS		D			D			C			C	

Intersection Summary		
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	94.2	Sum of lost time (s) 16.0
Intersection Capacity Utilization	65.3%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↖	↖	↑	↓	↘
Volume (vph)	0	196	145	1140	917	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	206	153	1200	965	11
RTOR Reduction (vph)	0	150	0	0	1	0
Lane Group Flow (vph)	0	56	153	1200	975	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.7	7.7	36.8	20.5	
Effective Green, g (s)		7.4	7.4	36.8	21.4	
Actuated g/C Ratio		0.20	0.20	1.00	0.58	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		323	355	1863	2053	
v/s Ratio Prot		0.03	0.09	0.64	0.28	
v/s Ratio Perm						
v/c Ratio		0.17	0.43	0.64	0.47	
Uniform Delay, d1		12.2	12.9	0.0	4.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.3	0.6	0.1	
Delay (s)		12.3	13.2	0.6	4.5	
Level of Service		B	B	A	A	
Approach Delay (s)	12.3			2.0	4.5	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	191	2	38	180	24	0	24	34	52	47	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	201	2	40	189	25	0	25	36	55	49	3
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	216			204			517	503	203	538	491	203
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216			204			517	503	203	538	491	203
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	94	96	87	89	100
cM capacity (veh/h)	1353			1366			418	456	837	406	462	837
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	205	255	61	107								
Volume Left	2	40	0	55								
Volume Right	2	25	36	3								
cSH	1353	1366	622	437								
Volume to Capacity	0.00	0.03	0.10	0.25								
Queue Length 95th (ft)	0	2	8	24								
Control Delay (s)	0.1	1.4	11.4	15.9								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.1	1.4	11.4	15.9								
Approach LOS			B	C								
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			45.6%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	22	85	92	71	101	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	23	89	97	75	106	23
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	113	172	129			
Volume Left (vph)	23	0	106			
Volume Right (vph)	0	75	23			
Hadj (s)	0.08	-0.23	0.09			
Departure Headway (s)	4.5	4.1	4.6			
Degree Utilization, x	0.14	0.20	0.17			
Capacity (veh/h)	774	835	735			
Control Delay (s)	8.2	8.1	8.5			
Approach Delay (s)	8.2	8.1	8.5			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.3			
Level of Service			A			
Intersection Capacity Utilization			31.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	63	39	118	64	28	42	142	201	61	28	204	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	66	41	124	67	29	44	149	212	64	29	215	44
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	107	124	97	44	425	244	44					
Volume Left (vph)	66	0	67	0	149	29	0					
Volume Right (vph)	0	124	0	44	64	0	44					
Hadj (s)	0.16	-0.57	0.38	-0.67	0.01	0.06	-0.57					
Departure Headway (s)	6.2	3.2	6.8	5.8	5.1	5.4	3.2					
Degree Utilization, x	0.19	0.11	0.18	0.07	0.60	0.36	0.04					
Capacity (veh/h)	503	1121	467	551	680	631	1121					
Control Delay (s)	10.7	6.6	10.2	8.0	15.4	11.4	6.3					
Approach Delay (s)	8.5		9.5		15.4	10.6						
Approach LOS	A		A		C	B						
Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			56.7%		ICU Level of Service		B					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	103	149	50	22	109	148	84	171	56	128	166	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	108	157	53	23	115	156	88	180	59	135	175	58

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	318	138	156	327	367
Volume Left (vph)	108	23	0	88	135
Volume Right (vph)	53	0	156	59	58
Hadj (s)	0.00	0.07	-0.57	-0.02	0.01
Departure Headway (s)	6.4	7.0	3.2	6.2	6.2
Degree Utilization, x	0.57	0.27	0.14	0.57	0.63
Capacity (veh/h)	512	427	1121	537	541
Control Delay (s)	17.5	12.5	6.7	17.0	19.1
Approach Delay (s)	17.5	9.4		17.0	19.1
Approach LOS	C	A		C	C

Intersection Summary				
Delay			16.0	
Level of Service			C	
Intersection Capacity Utilization		59.0%	ICU Level of Service	B
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↕	↗
Volume (vph)	141	152	98	87	153	62	87	316	43	70	429	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1740		1770	1782		1770	3463		1770	3539	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1740		1770	1782		1770	3463		1770	3539	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	148	160	103	92	161	65	92	333	45	74	452	65
RTOR Reduction (vph)	0	17	0	0	11	0	0	10	0	0	0	50
Lane Group Flow (vph)	148	246	0	92	215	0	92	368	0	74	452	15
Confl. Peds. (#/hr)			5	5					5	5		
Confl. Bikes (#/hr)			2									2
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	16.7	16.7		15.2	15.2		7.2	15.9		6.6	15.3	15.3
Effective Green, g (s)	16.9	16.9		15.4	15.4		6.9	16.5		6.3	15.9	15.9
Actuated g/C Ratio	0.24	0.24		0.22	0.22		0.10	0.23		0.09	0.22	0.22
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	420	413		383	385		171	803		156	791	345
v/s Ratio Prot	0.08	c0.14		0.05	c0.12		c0.05	0.11		0.04	c0.13	
v/s Ratio Perm												0.01
v/c Ratio	0.35	0.60		0.24	0.56		0.54	0.46		0.47	0.57	0.04
Uniform Delay, d1	22.5	24.1		23.0	24.8		30.6	23.5		30.8	24.6	21.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.9		0.2	1.4		1.6	0.3		0.8	0.6	0.0
Delay (s)	22.9	26.0		23.3	26.2		32.2	23.8		31.7	25.2	21.7
Level of Service	C	C		C	C		C	C		C	C	C
Approach Delay (s)		24.9			25.4			25.4			25.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↕	↕↗	
Volume (vph)	0	163	155	753	1015	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	172	163	793	1068	15
RTOR Reduction (vph)	0	121	0	0	2	0
Lane Group Flow (vph)	0	51	163	793	1081	0
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		8.2	8.2	35.9	19.1	
Effective Green, g (s)		7.9	7.9	35.9	20.0	
Actuated g/C Ratio		0.22	0.22	1.00	0.56	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		354	389	1863	1967	
v/s Ratio Prot		0.03	0.09	c0.43	c0.31	
v/s Ratio Perm						
v/c Ratio		0.14	0.42	0.43	0.55	
Uniform Delay, d1		11.3	12.0	0.0	5.1	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.3	0.1	0.2	
Delay (s)		11.3	12.3	0.1	5.2	
Level of Service		B	B	A	A	
Approach Delay (s)	11.3			2.1	5.2	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	153	3	17	152	60	2	28	43	14	11	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	161	3	18	160	63	2	29	45	15	12	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	223			164			402	426	163	454	396	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			164			402	426	163	454	396	192
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	94	95	97	98	100
cM capacity (veh/h)	1346			1414			542	513	882	463	534	850

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	166	241	77	28
Volume Left	2	18	2	15
Volume Right	3	63	45	2
cSH	1346	1414	682	507
Volume to Capacity	0.00	0.01	0.11	0.06
Queue Length 95th (ft)	0	1	9	4
Control Delay (s)	0.1	0.7	10.9	12.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.7	10.9	12.5
Approach LOS			B	B

Intersection Summary			
Average Delay		2.7	
Intersection Capacity Utilization		37.2%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	13	94	96	70	63	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	99	101	74	66	15
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	113	175	81			
Volume Left (vph)	14	0	66			
Volume Right (vph)	0	74	15			
Hadj (s)	0.06	-0.22	0.09			
Departure Headway (s)	4.3	4.0	4.6			
Degree Utilization, x	0.14	0.19	0.10			
Capacity (veh/h)	808	878	733			
Control Delay (s)	8.0	8.0	8.1			
Approach Delay (s)	8.0	8.0	8.1			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.0			
Level of Service			A			
Intersection Capacity Utilization			26.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Congress Avenue & Forest Lodge Road

12/1/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	51	41	191	41	34	65	156	211	56	50	173	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	54	43	201	43	36	68	164	222	59	53	182	44
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total (vph)	97	201	79	68	445	235	44					
Volume Left (vph)	54	0	43	0	164	53	0					
Volume Right (vph)	0	201	0	68	59	0	44					
Hadj (s)	0.14	-0.57	0.31	-0.67	0.03	0.08	-0.57					
Departure Headway (s)	6.3	3.2	6.8	5.8	5.0	5.4	3.2					
Degree Utilization, x	0.17	0.18	0.15	0.11	0.62	0.35	0.04					
Capacity (veh/h)	500	1121	471	552	687	630	1121					
Control Delay (s)	10.5	6.9	9.7	8.3	16.0	11.2	6.3					
Approach Delay (s)	8.1		9.1		16.0	10.5						
Approach LOS	A		A		C	B						
Intersection Summary												
Delay			11.8									
Level of Service			B									
Intersection Capacity Utilization			57.0%		ICU Level of Service		B					
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Congress Avenue & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	62	84	11	54	120	221	13	152	52	186	161	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	65	88	12	57	126	233	14	160	55	196	169	64
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	165	183	233	228	429							
Volume Left (vph)	65	57	0	14	196							
Volume Right (vph)	12	0	233	55	64							
Hadj (s)	0.07	0.10	-0.57	-0.10	0.04							
Departure Headway (s)	6.2	6.2	3.2	5.7	5.4							
Degree Utilization, x	0.29	0.32	0.21	0.36	0.65							
Capacity (veh/h)	501	514	1122	576	633							
Control Delay (s)	11.7	12.0	7.0	11.8	18.0							
Approach Delay (s)	11.7	9.2		11.8	18.0							
Approach LOS	B	A		B	C							
Intersection Summary												
Delay			13.1									
Level of Service			B									
Intersection Capacity Utilization			59.9%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Highway 68 & David Avenue

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	151	129	115	170	69	192	622	118	87	502	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	0.98		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1707		1770	1775		1770	3417		1770	3539	1549
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1707		1770	1775		1770	3417		1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	101	159	136	121	179	73	202	655	124	92	528	76
RTOR Reduction (vph)	0	23	0	0	11	0	0	13	0	0	0	57
Lane Group Flow (vph)	101	272	0	121	241	0	202	766	0	92	528	19
Confl. Peds. (#/hr)			14	14					31	31		
Confl. Bikes (#/hr)			3			1			2			1
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												2
Actuated Green, G (s)	20.5	20.5		18.2	18.2		15.7	30.8		8.2	23.3	23.3
Effective Green, g (s)	20.7	20.7		18.4	18.4		15.4	31.4		7.9	23.9	23.9
Actuated g/C Ratio	0.22	0.22		0.19	0.19		0.16	0.33		0.08	0.25	0.25
Clearance Time (s)	4.2	4.2		4.2	4.2		3.7	4.6		3.7	4.6	4.6
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.5		2.0	2.0	2.0
Lane Grp Cap (vph)	388	374		345	345		288	1136		148	895	392
v/s Ratio Prot	0.06	c0.16		0.07	c0.14		c0.11	c0.22		0.05	0.15	
v/s Ratio Perm												0.01
v/c Ratio	0.26	0.73		0.35	0.70		0.70	0.67		0.62	0.59	0.05
Uniform Delay, d1	30.5	34.2		32.8	35.4		37.3	27.1		41.8	30.9	26.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	6.5		0.5	5.6		6.2	1.5		5.7	0.6	0.0
Delay (s)	30.8	40.8		33.3	41.0		43.5	28.6		47.5	31.6	26.7
Level of Service	C	D		C	D		D	C		D	C	C
Approach Delay (s)		38.2			38.5			31.6			33.2	
Approach LOS		D			D			C			C	

Intersection Summary		
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.72	
Actuated Cycle Length (s)	94.4	Sum of lost time (s) 16.0
Intersection Capacity Utilization	65.4%	ICU Level of Service C
Analysis Period (min)	15	
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis

8: Highway 68 & Morse Drive

12/1/2014



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	197	146	1141	918	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	
Frt		0.86	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1611	1770	1863	3532	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1611	1770	1863	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	207	154	1201	966	11
RTOR Reduction (vph)	0	150	0	0	1	0
Lane Group Flow (vph)	0	57	154	1201	976	0
Confl. Bikes (#/hr)						1
Turn Type		Over	Prot	NA	NA	
Protected Phases		1	1	6	2	
Permitted Phases						
Actuated Green, G (s)		7.7	7.7	36.8	20.5	
Effective Green, g (s)		7.4	7.4	36.8	21.4	
Actuated g/C Ratio		0.20	0.20	1.00	0.58	
Clearance Time (s)		3.7	3.7	4.9	4.9	
Vehicle Extension (s)		2.0	2.0	1.5	1.5	
Lane Grp Cap (vph)		323	355	1863	2053	
v/s Ratio Prot		0.04	0.09	0.64	0.28	
v/s Ratio Perm						
v/c Ratio		0.18	0.43	0.64	0.48	
Uniform Delay, d1		12.2	12.9	0.0	4.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	0.3	0.6	0.1	
Delay (s)		12.3	13.2	0.6	4.5	
Level of Service		B	B	A	A	
Approach Delay (s)	12.3			2.0	4.5	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 22: Congress Road & Forest Lodge Road

12/1/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	191	2	41	180	24	0	25	37	52	48	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	201	2	43	189	25	0	26	39	55	51	3
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	216			204			524	509	203	548	498	203
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216			204			524	509	203	548	498	203
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			100	94	95	86	89	100
cM capacity (veh/h)	1353			1366			412	451	837	396	458	837

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	205	258	65	108
Volume Left	2	43	0	55
Volume Right	2	25	39	3
cSH	1353	1366	622	430
Volume to Capacity	0.00	0.03	0.10	0.25
Queue Length 95th (ft)	0	2	9	25
Control Delay (s)	0.1	1.5	11.5	16.2
Lane LOS	A	A	B	C
Approach Delay (s)	0.1	1.5	11.5	16.2
Approach LOS			B	C

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	45.9%		ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

23: Congress Road & Morse Drive

12/1/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Stop	Stop		Stop	
Volume (vph)	24	85	92	72	102	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	25	89	97	76	107	25
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	115	173	133			
Volume Left (vph)	25	0	107			
Volume Right (vph)	0	76	25			
Hadj (s)	0.08	-0.23	0.08			
Departure Headway (s)	4.5	4.1	4.6			
Degree Utilization, x	0.14	0.20	0.17			
Capacity (veh/h)	771	831	735			
Control Delay (s)	8.2	8.1	8.6			
Approach Delay (s)	8.2	8.1	8.6			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.3			
Level of Service			A			
Intersection Capacity Utilization			32.2%	ICU Level of Service	A	
Analysis Period (min)			15			

APPENDIX D: PEAK HOUR SIGNAL WARRANT ANALYSIS





Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

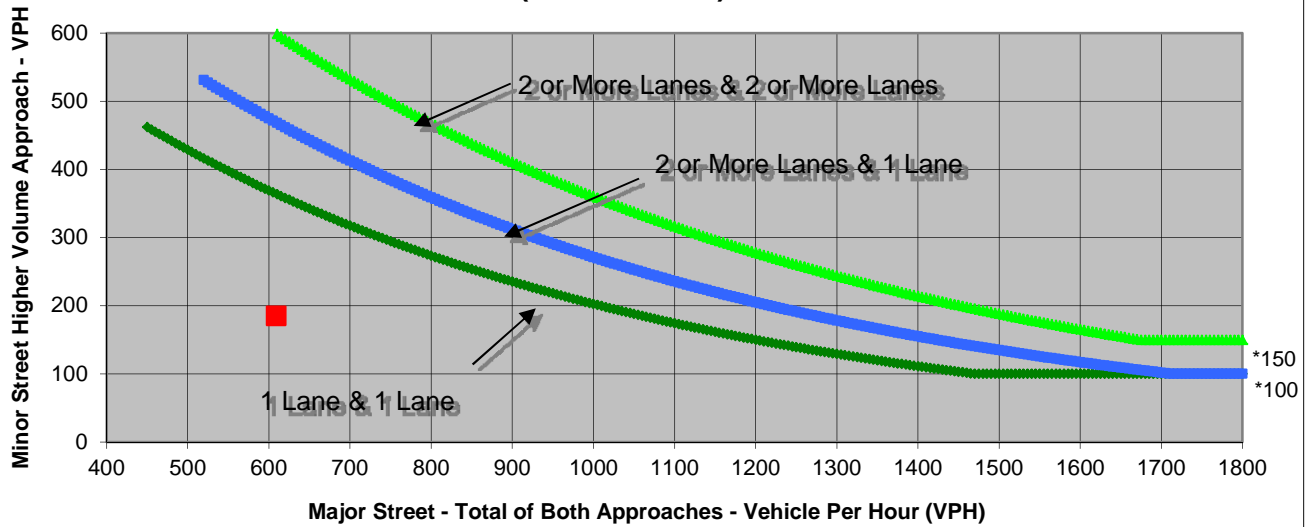
Turn Movement Volumes

	NB	SB	EB	WB
Left	125	25	54	58
Through	182	185	35	25
Right	55	37	96	38
Total	362	247	185	121

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>609</u>	<u>185</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

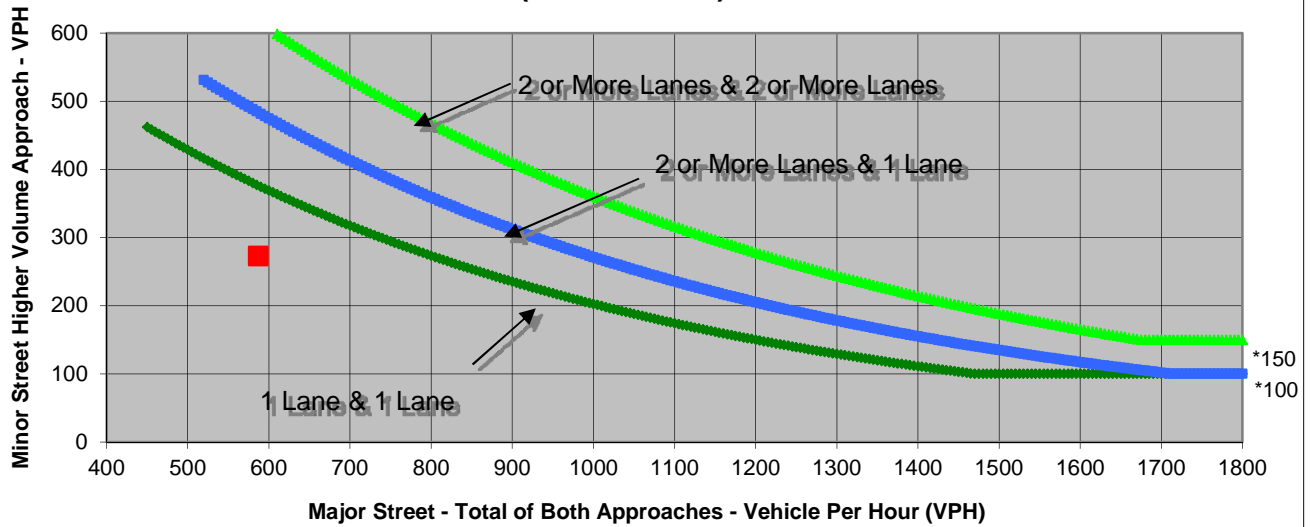
Turn Movement Volumes

	NB	SB	EB	WB
Left	76	105	93	20
Through	155	150	135	99
Right	51	50	45	130
Total	282	305	273	249

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street David Ave	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	587	273	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

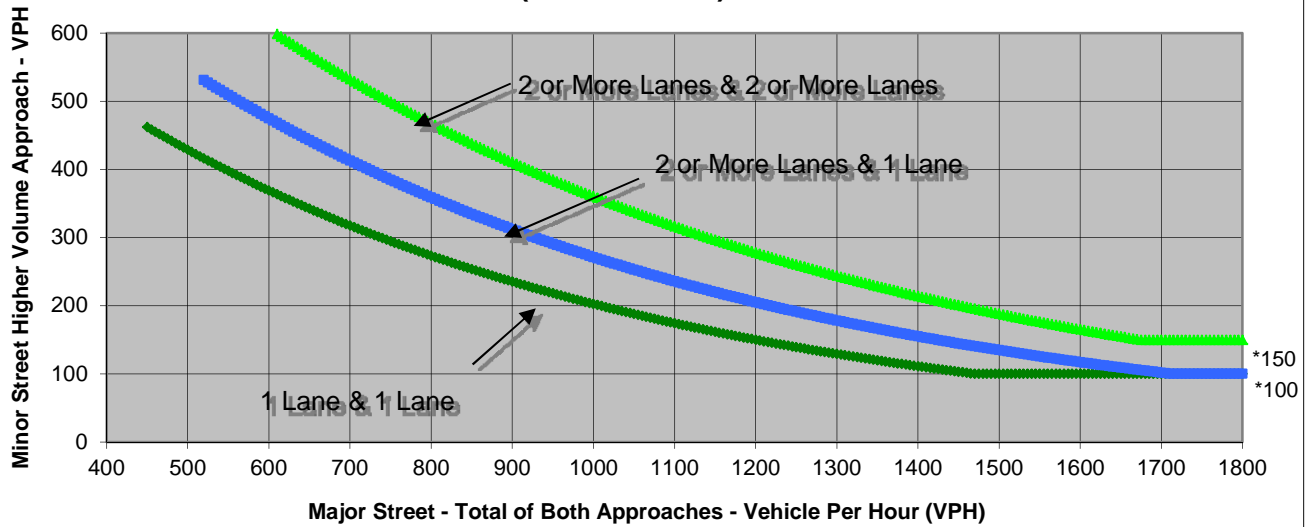
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	13	2	14
Through	17	8	133	136
Right	32	2	3	54
Total	50	23	138	204

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	342	50	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Congress Ave
 Minor Street SFB Morse Dr

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

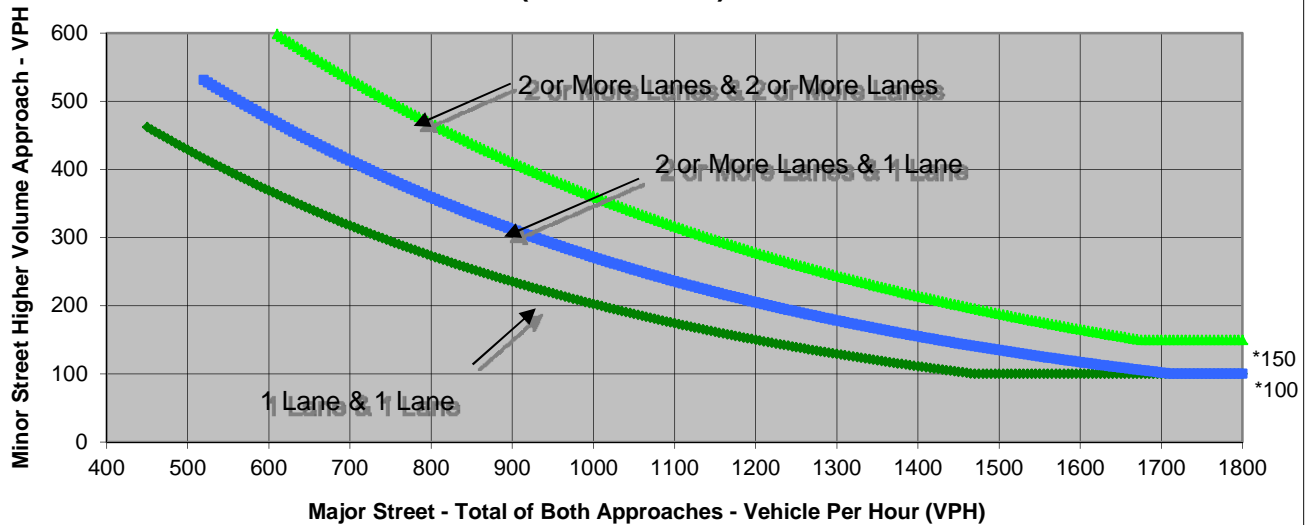
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	53	8	0
Through	0	0	81	85
Right	0	9	0	57
Total	0	62	89	142

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	231	62	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour PM

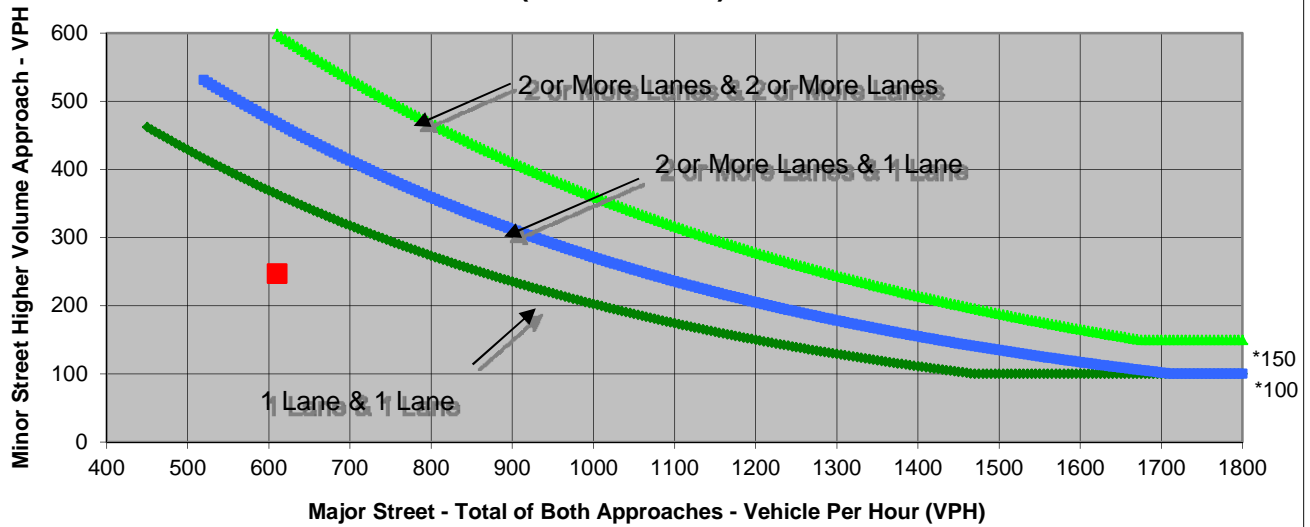
Turn Movement Volumes

	NB	SB	EB	WB
Left	131	45	45	37
Through	191	156	37	31
Right	51	36	165	59
Total	373	237	247	127

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	610	247	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour PM

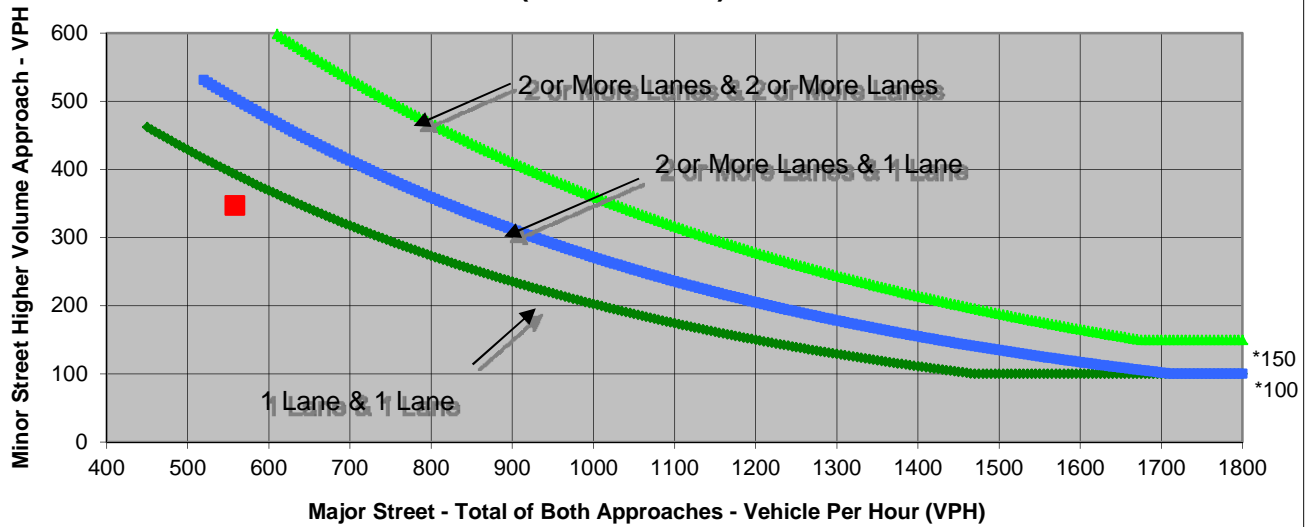
Turn Movement Volumes

	NB	SB	EB	WB
Left	12	162	56	49
Through	137	145	76	108
Right	47	55	10	190
Total	196	362	142	347

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	David Ave	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>558</u>	<u>347</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour PM

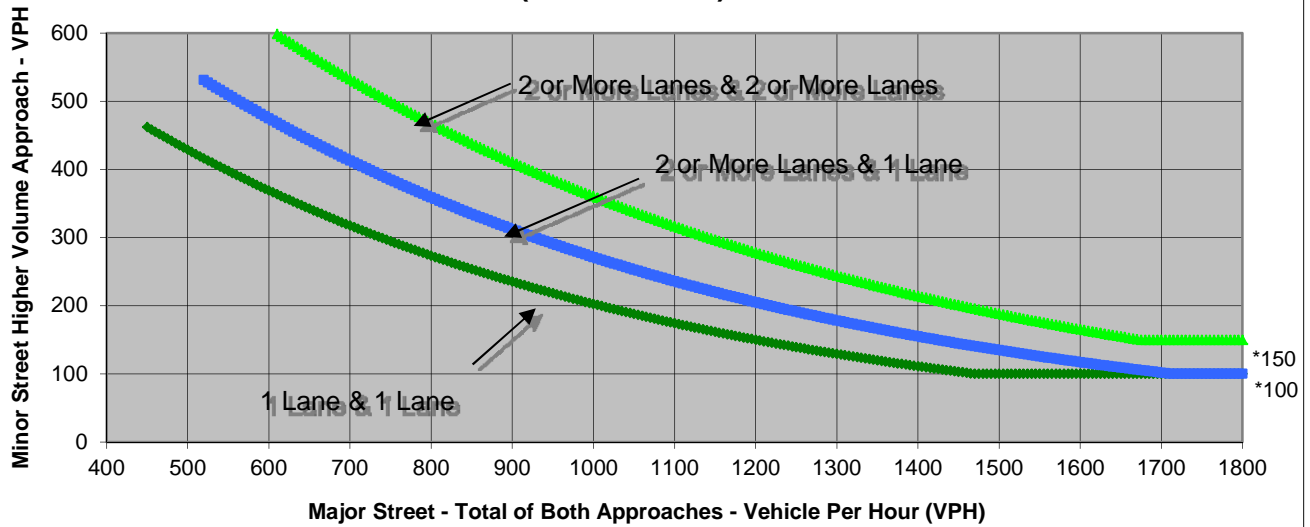
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	47	2	31
Through	19	37	169	157
Right	28	3	2	22
Total	47	87	173	210

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	383	87	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street SFB Morse Dr

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour PM

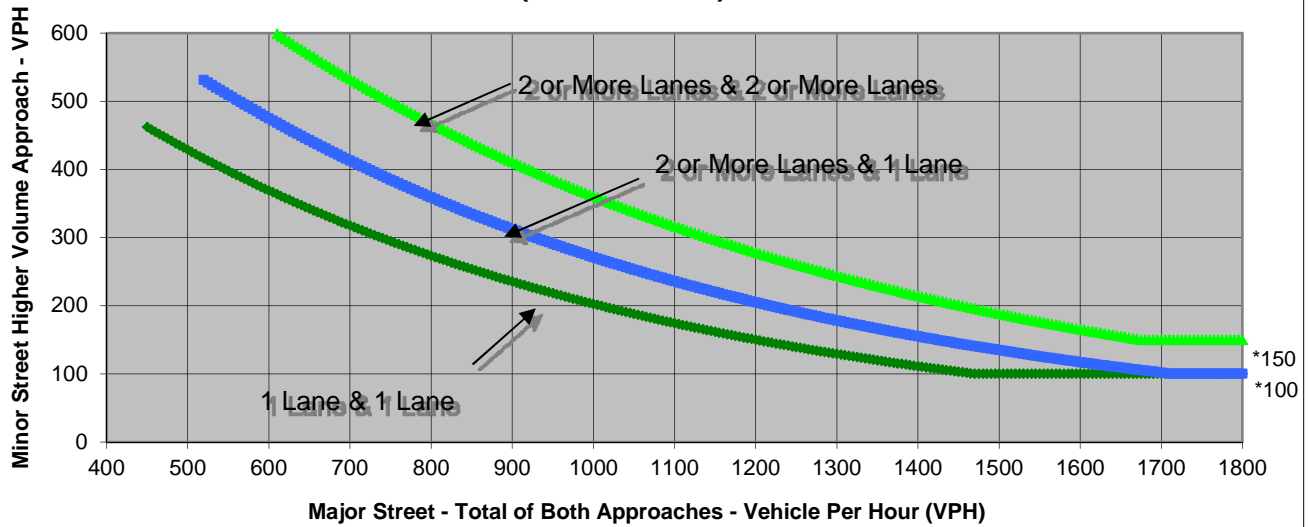
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	86	17	0
Through	0	0	73	78
Right	0	15	0	61
Total	0	101	90	139

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	229	101	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

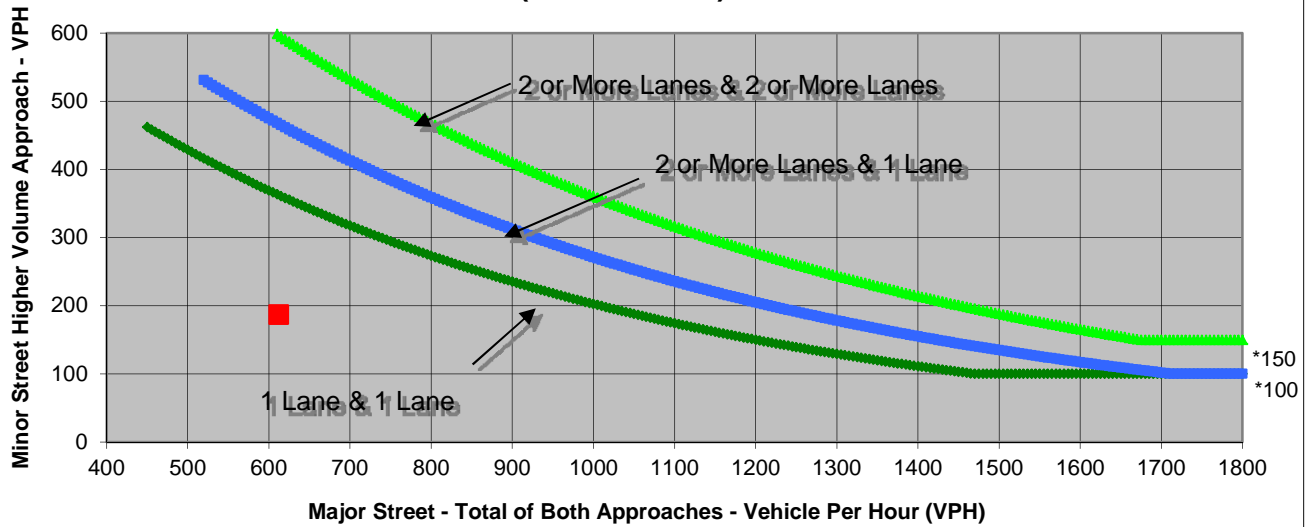
Turn Movement Volumes

	NB	SB	EB	WB
Left	128	25	54	58
Through	182	185	35	25
Right	55	37	98	38
Total	365	247	187	121

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>612</u>	<u>187</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

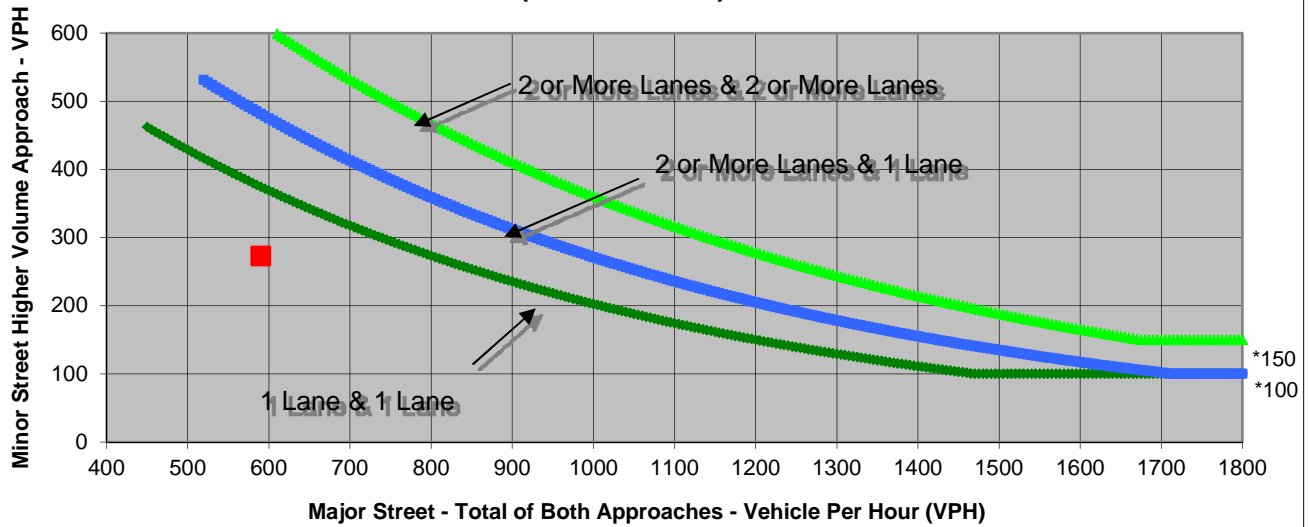
Turn Movement Volumes

	NB	SB	EB	WB
Left	76	108	93	20
Through	155	150	135	99
Right	51	50	45	133
Total	282	308	273	252

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street David Ave	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	590	273	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Existing Conditions
 Peak Hour AM

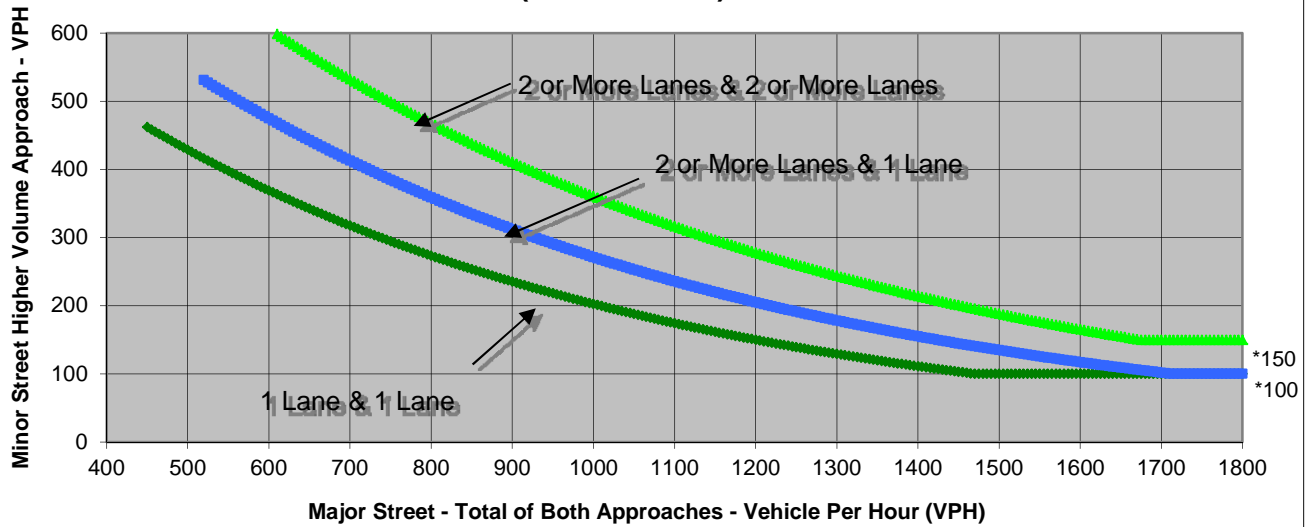
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	13	2	17
Through	18	9	133	136
Right	35	2	3	54
Total	54	24	138	207

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	345	54	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Congress Ave**
 Minor Street **SFB Morse Dr**

Project **DMFP Inclusionary Housing**
 Scenario **Existing Conditions**
 Peak Hour **AM**

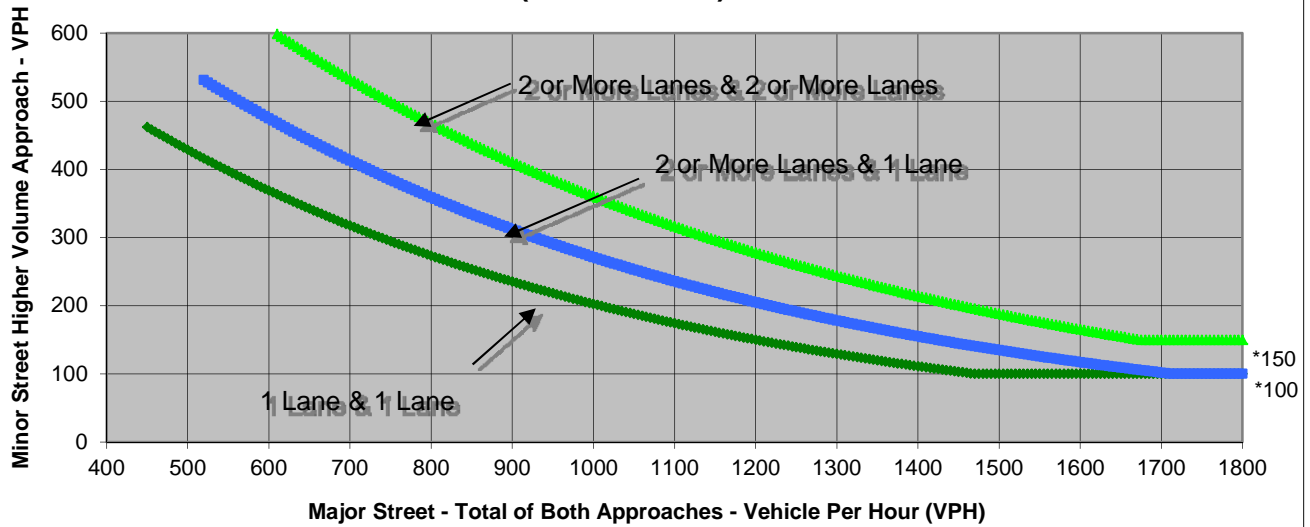
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	54	10	0
Through	0	0	81	85
Right	0	11	0	58
Total	0	65	91	143

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	234	65	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Existing + Project
 Peak Hour PM

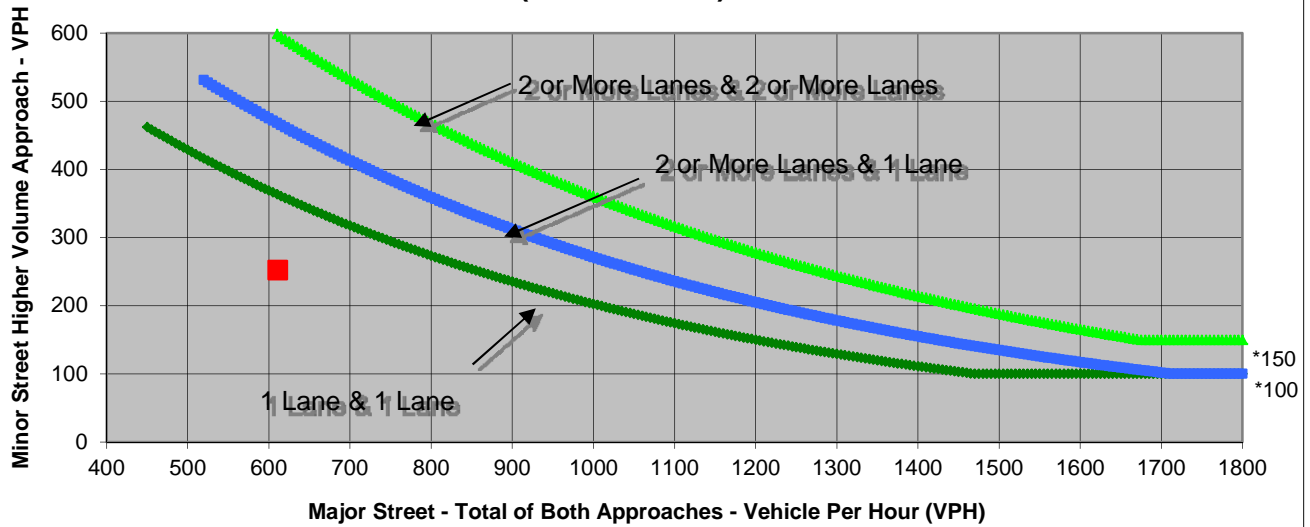
Turn Movement Volumes

	NB	SB	EB	WB
Left	132	45	46	37
Through	191	156	37	31
Right	51	36	169	59
Total	374	237	252	127

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	611	252	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Existing + Project
 Peak Hour PM

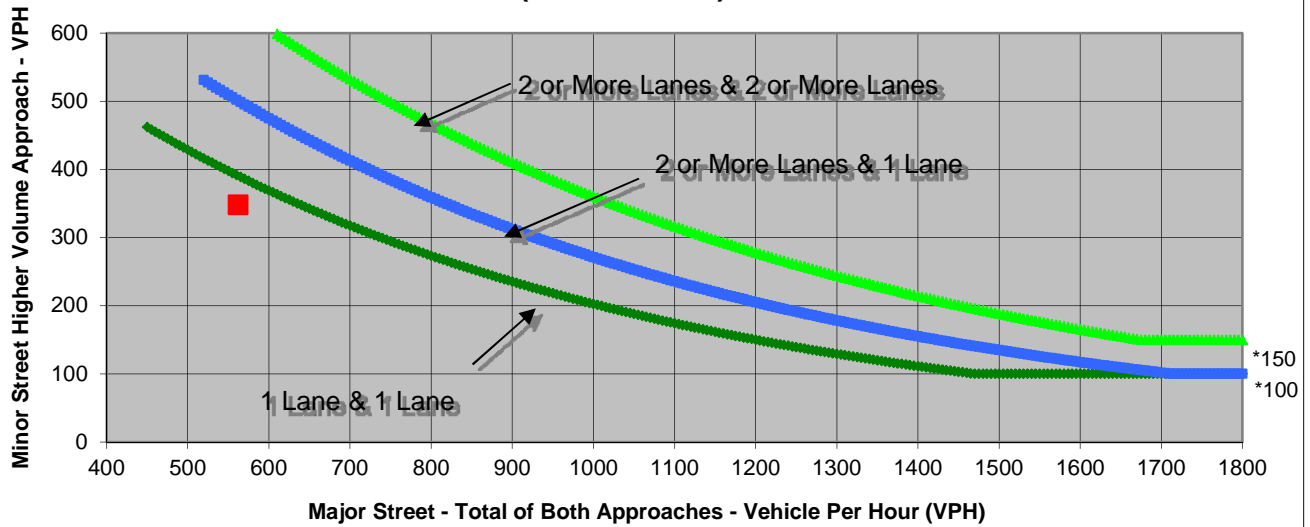
Turn Movement Volumes

	NB	SB	EB	WB
Left	12	166	56	49
Through	137	145	76	108
Right	47	55	10	191
Total	196	366	142	348

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	David Ave	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>562</u>	<u>348</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Existing + Project
 Peak Hour PM

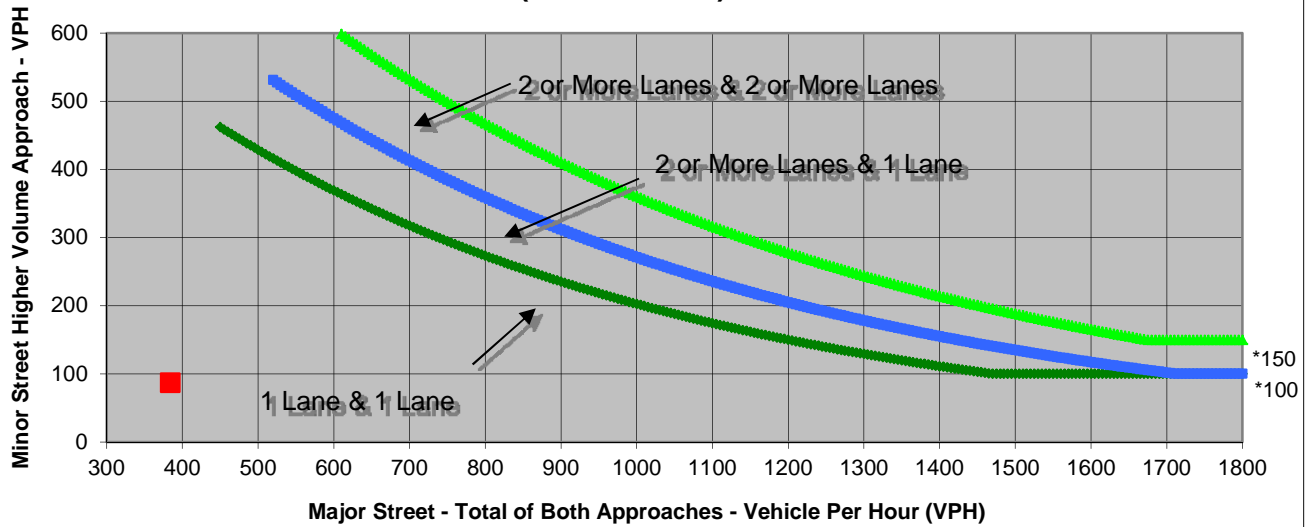
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	47	2	32
Through	21	37	169	157
Right	32	3	2	22
Total	54	87	173	211

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	384	87	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No **1** of **1**

Major Street **Congress Ave**
 Minor Street **SFB Morse Dr**

Project **DMFP Inclusionary Housing**
 Scenario **Existing + Project**
 Peak Hour **PM**

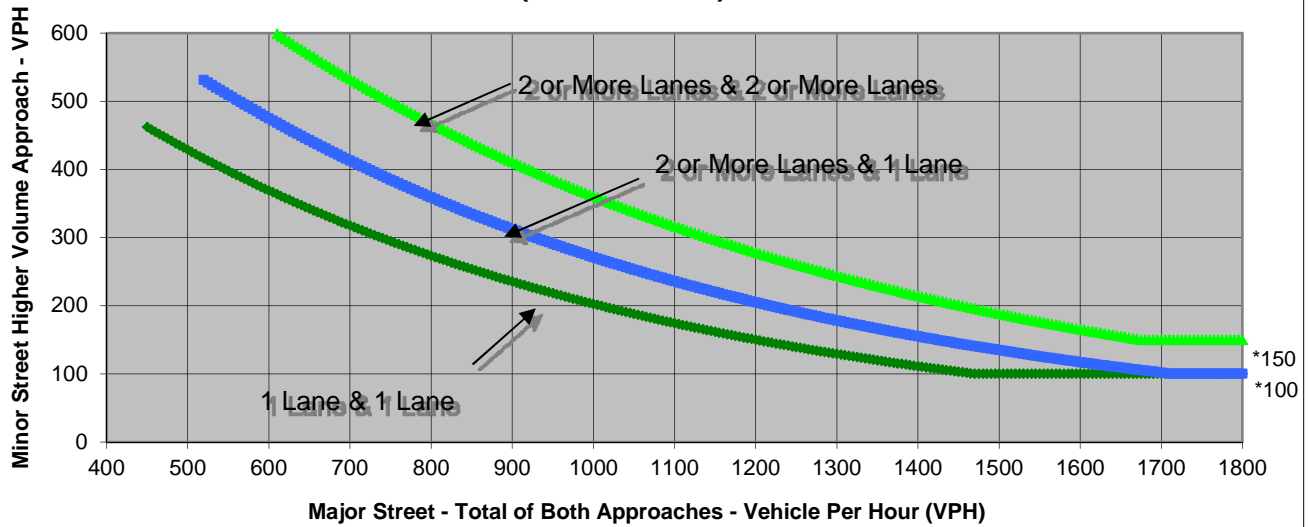
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	88	17	0
Through	0	0	73	78
Right	0	18	0	61
Total	0	106	90	139

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	229	106	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour AM

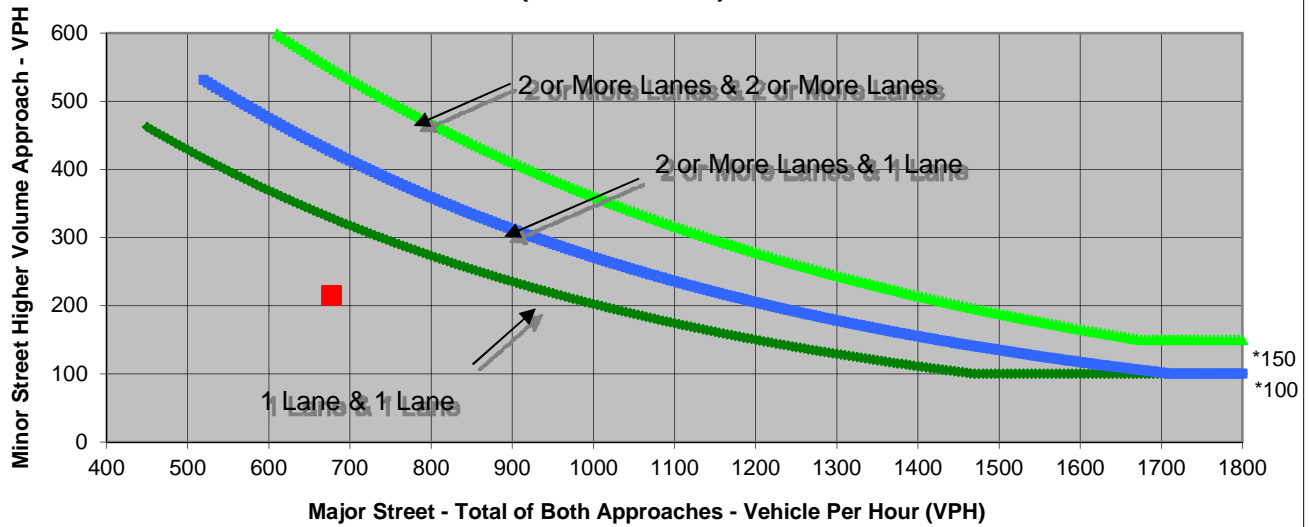
Turn Movement Volumes

	NB	SB	EB	WB
Left	141	28	62	64
Through	201	204	39	28
Right	61	42	114	42
Total	403	274	215	134

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>677</u>	<u>215</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour AM

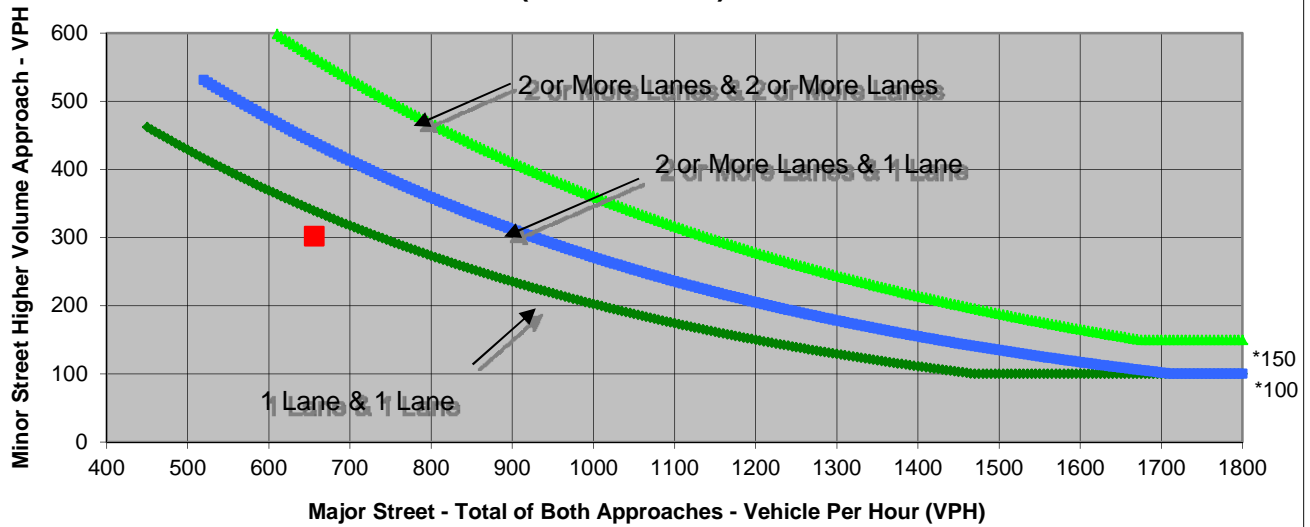
Turn Movement Volumes

	NB	SB	EB	WB
Left	84	124	103	22
Through	171	166	149	109
Right	56	55	50	147
Total	311	345	302	278

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street David Ave	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	656	302	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour AM

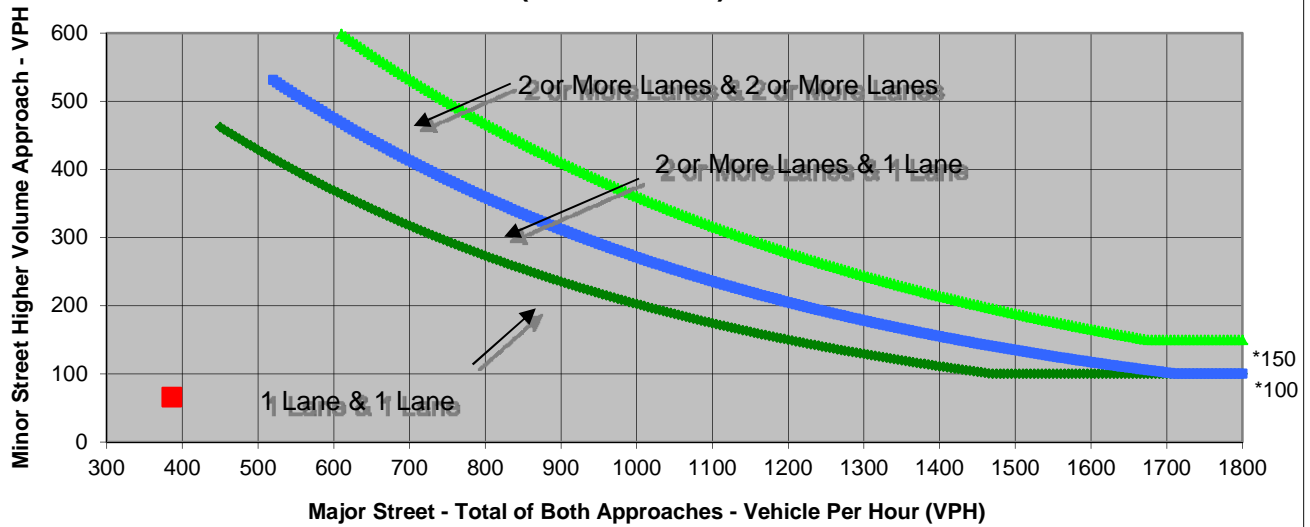
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	14	2	16
Through	26	11	153	152
Right	39	2	3	60
Total	66	27	158	228

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	386	66	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street SFB Morse Dr

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour AM

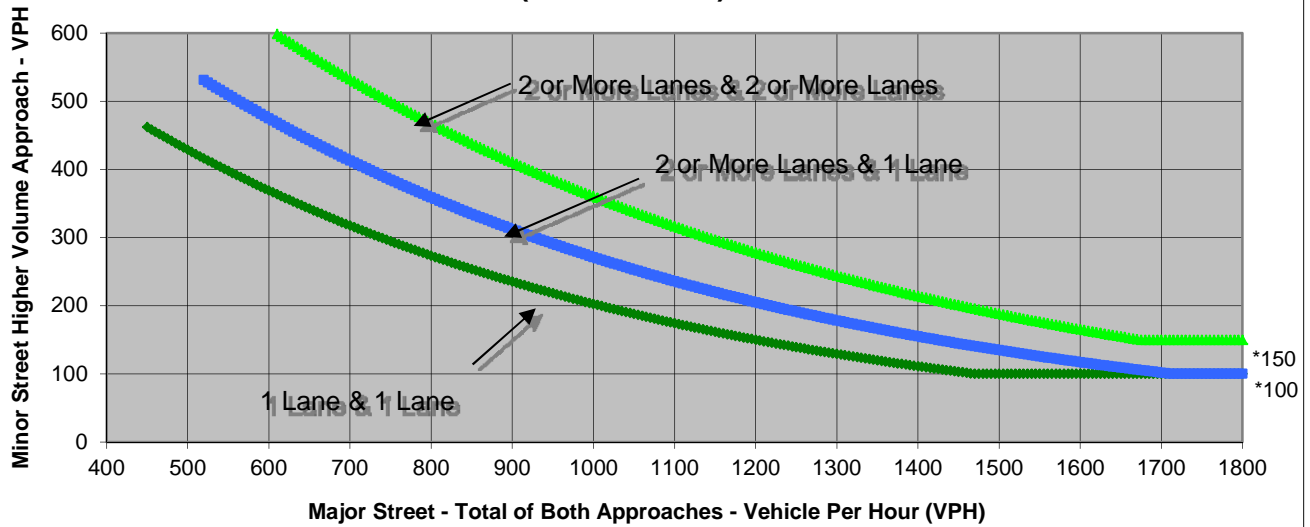
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	61	13	0
Through	0	0	94	76
Right	0	11	0	70
Total	0	72	107	146

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	253	72	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour PM

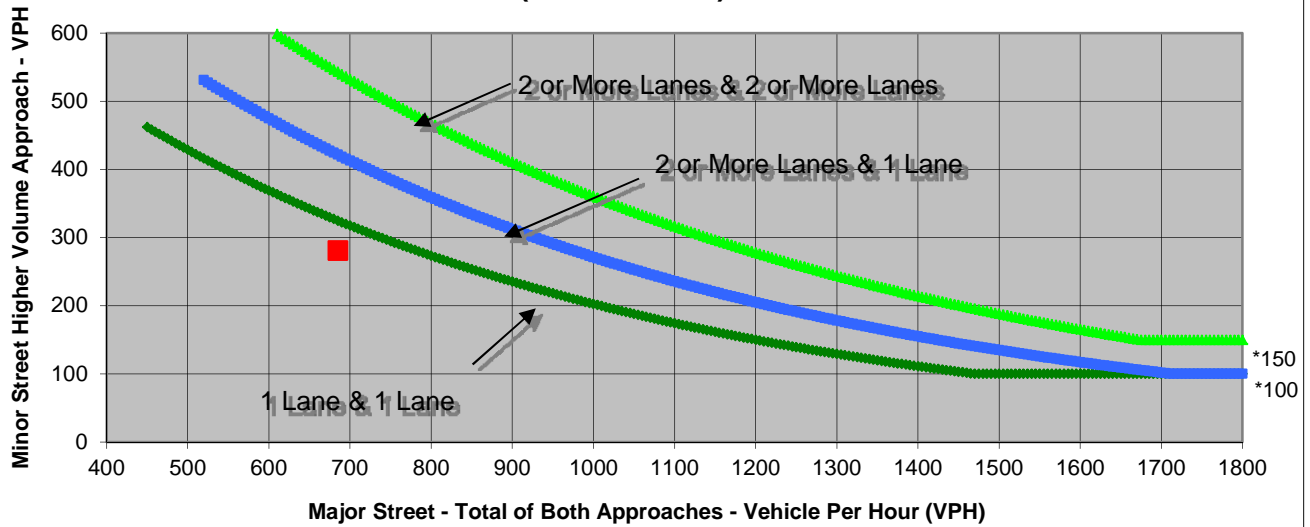
Turn Movement Volumes

	NB	SB	EB	WB
Left	153	50	51	41
Through	211	173	41	34
Right	56	42	189	65
Total	420	265	281	140

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	<u>1</u>	<u>2</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>685</u>	<u>281</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour PM

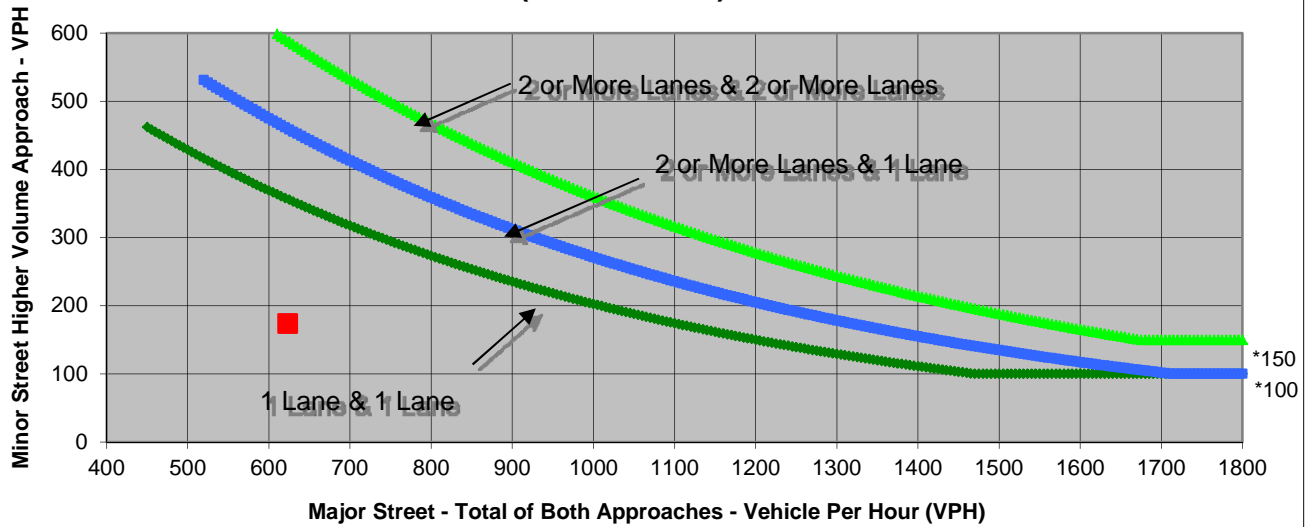
Turn Movement Volumes

	NB	SB	EB	WB
Left	13	184	62	54
Through	152	161	84	120
Right	52	61	11	0
Total	217	406	157	174

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	David Ave	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	623	174	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Cumulative No Project
 Peak Hour PM

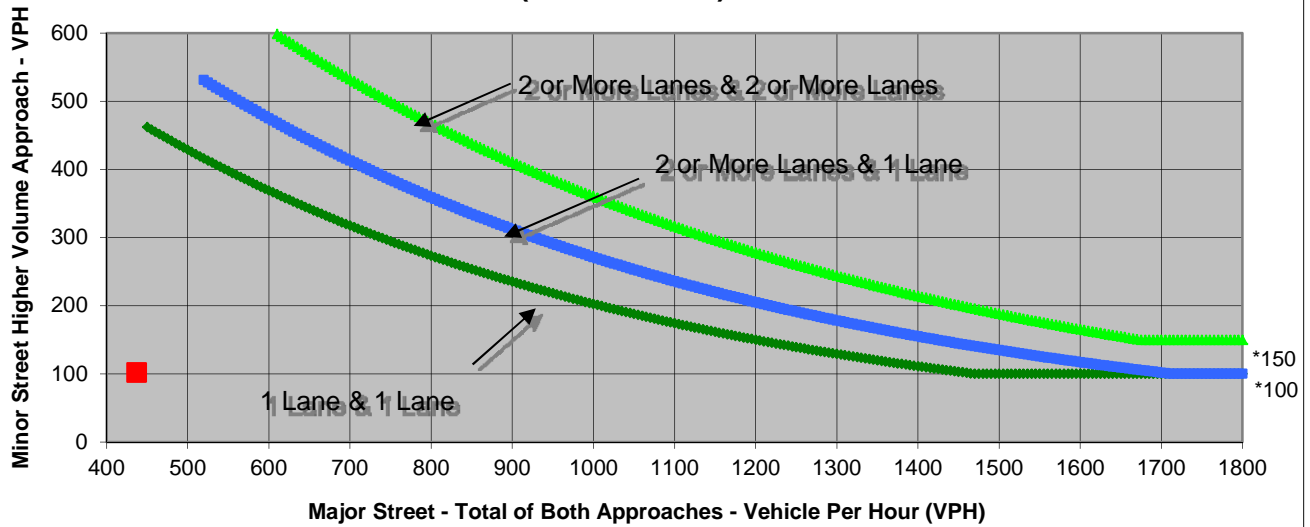
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	52	2	38
Through	24	47	191	180
Right	34	3	2	24
Total	58	102	195	242

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	437	102	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No **1** of **1**

Major Street **Congress Ave**
 Minor Street **SFB Morse Dr**

Project **DMFP Inclusionary Housing**
 Scenario **Cumulative No Project**
 Peak Hour **PM**

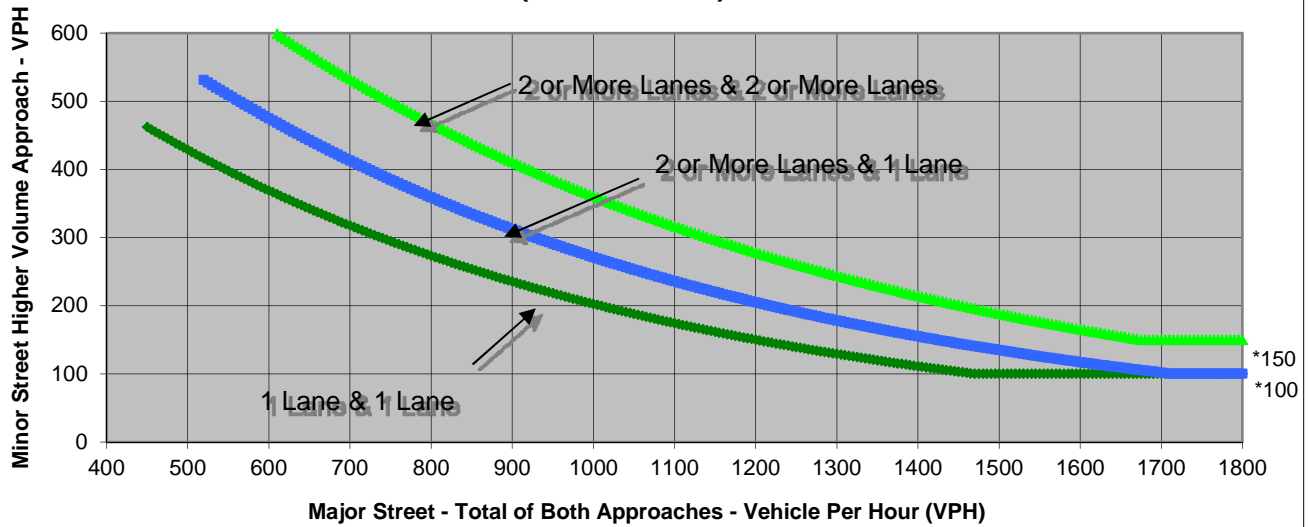
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	101	22	0
Through	0	0	85	92
Right	0	22	0	71
Total	0	123	107	163

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	270	123	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour AM

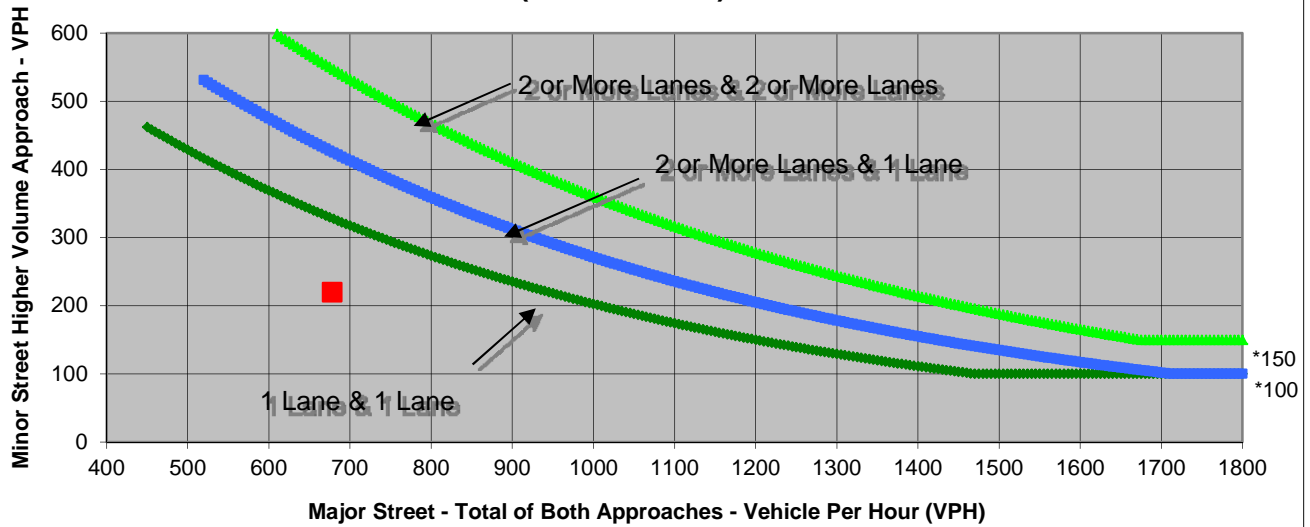
Turn Movement Volumes

	NB	SB	EB	WB
Left	142	28	63	64
Through	201	204	39	28
Right	61	42	118	42
Total	404	274	220	134

Major Street Direction

x North/South
 East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	<u>1</u>	<u>1</u>	<u>NO</u>
Traffic Volume (VPH) *	<u>678</u>	<u>220</u>	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour AM

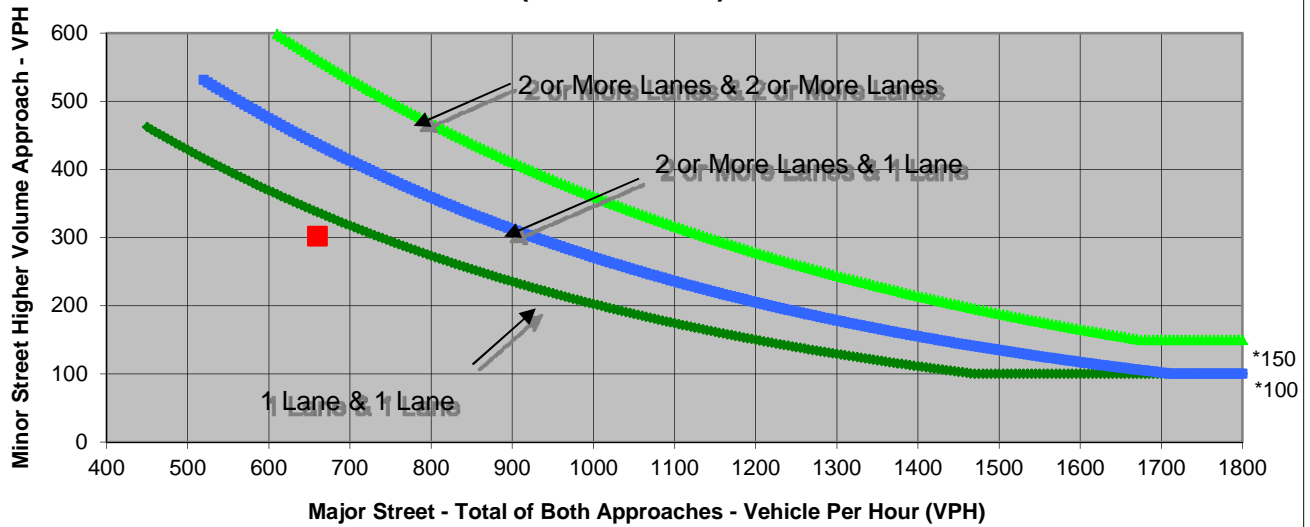
Turn Movement Volumes

	NB	SB	EB	WB
Left	84	128	103	22
Through	171	166	149	109
Right	56	55	50	148
Total	311	349	302	279

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street David Ave	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	660	302	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour AM

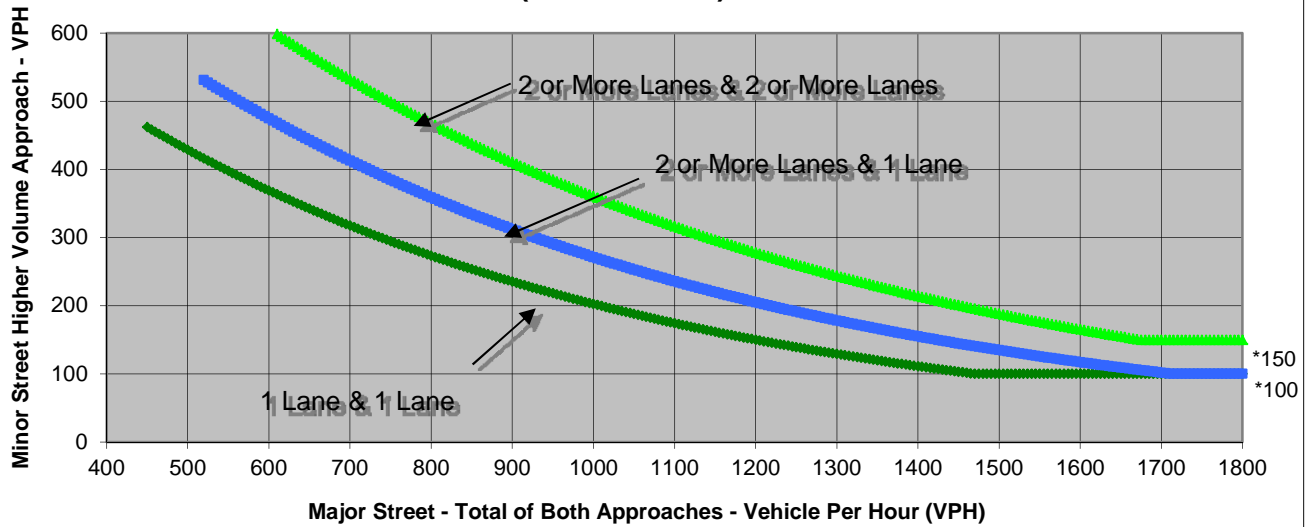
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	14	2	17
Through	28	11	153	152
Right	43	2	3	60
Total	73	27	158	229

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	387	73	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street SFB Morse Dr

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour AM

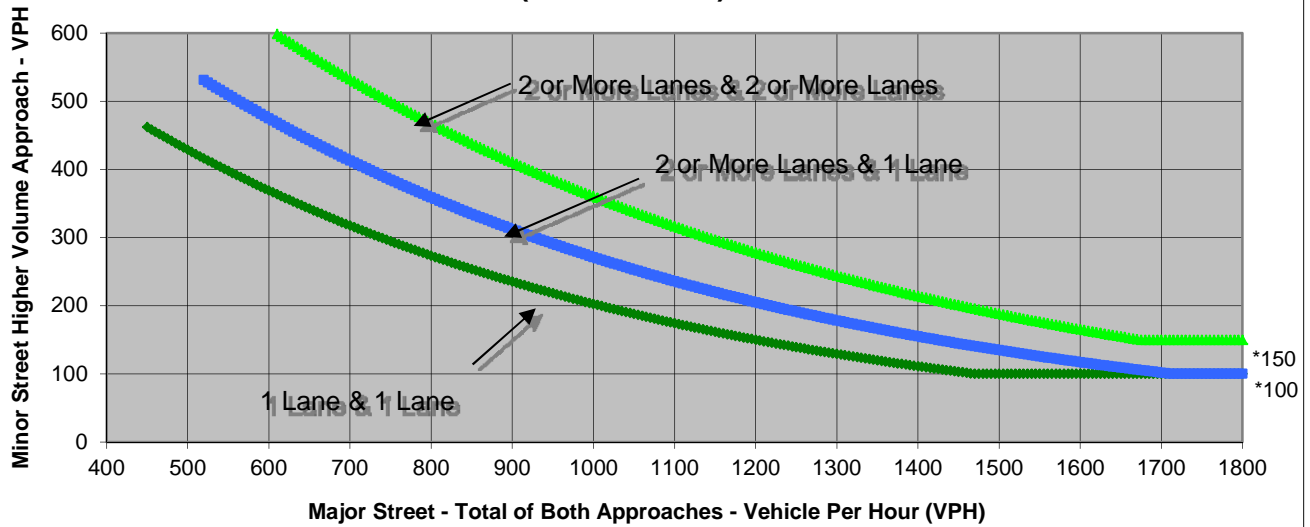
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	63	13	0
Through	0	0	94	96
Right	0	14	0	70
Total	0	77	107	166

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	273	77	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Road

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour PM

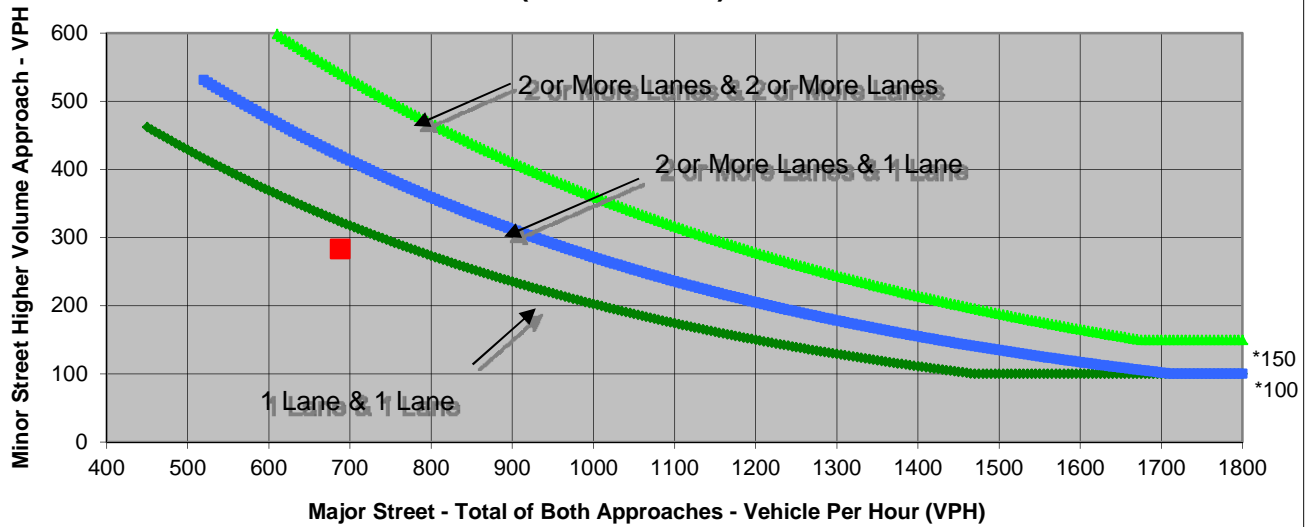
Turn Movement Volumes

	NB	SB	EB	WB
Left	156	50	51	41
Through	211	173	41	34
Right	56	42	191	65
Total	423	265	283	140

Major Street Direction

x North/South
 East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	Forest Lodge Road	
Number of Approach Lanes	1	2	<u>NO</u>
Traffic Volume (VPH) *	688	283	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Congress Ave
 Minor Street David Ave

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour PM

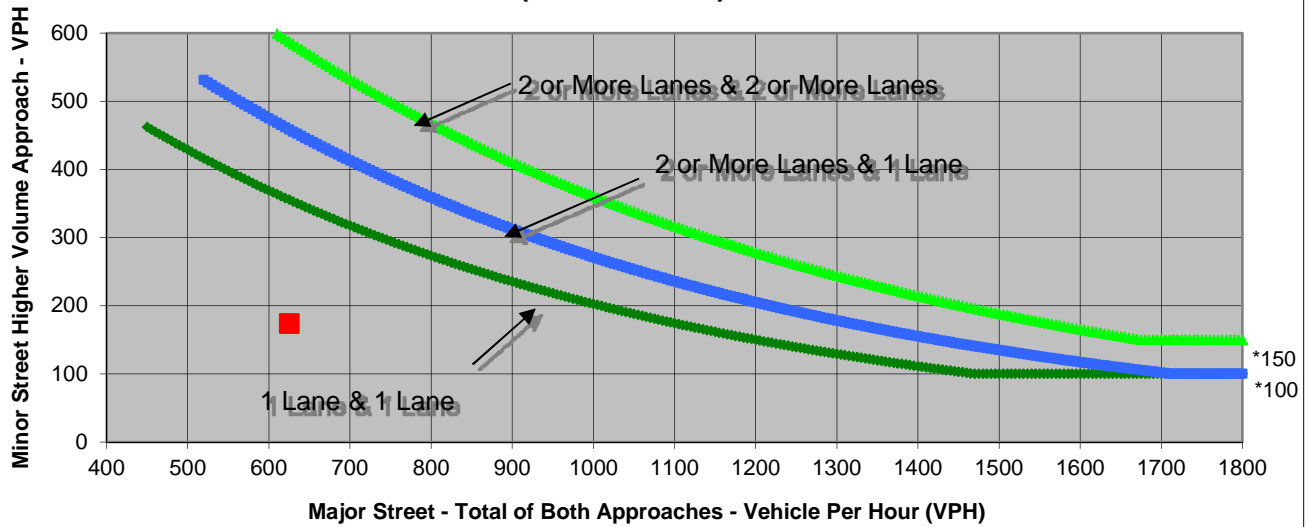
Turn Movement Volumes

	NB	SB	EB	WB
Left	13	186	62	54
Through	152	161	84	120
Right	52	61	11	0
Total	217	408	157	174

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Congress Ave	David Ave	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	625	174	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street Forest Lodge Rd

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour PM

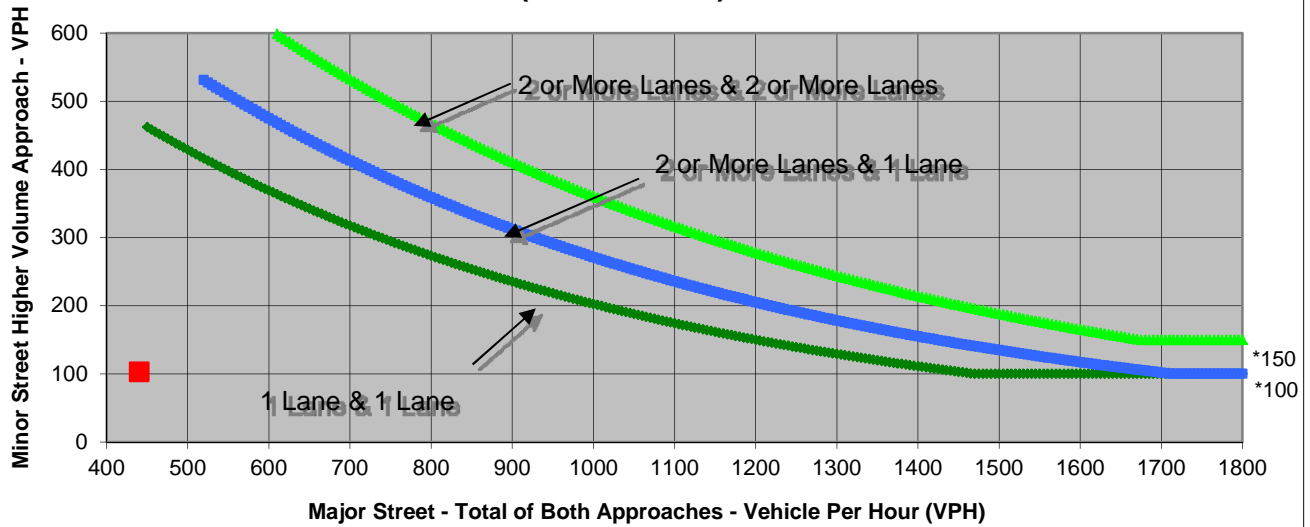
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	52	2	41
Through	25	48	191	180
Right	37	3	2	24
Total	62	103	195	245

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Congress Ave	Minor Street Forest Lodge Rd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	440	103	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 1

Major Street Congress Ave
 Minor Street SFB Morse Dr

Project DMFP Inclusionary Housing
 Scenario Cumulative Plus Project
 Peak Hour PM

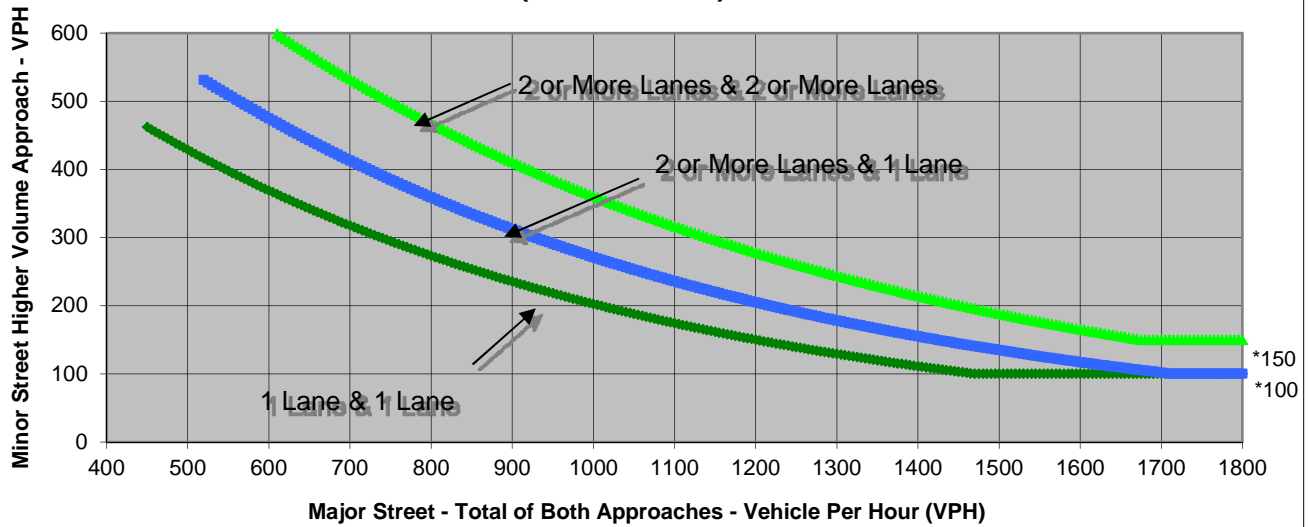
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	102	24	0
Through	0	0	85	92
Right	0	24	0	72
Total	0	126	109	164

Major Street Direction

North/South
 East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* 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 APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Congress Ave	Minor Street SFB Morse Dr	Warrant Met
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	273	126	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.