



Traffic Impact Study

for The Avalon

Draft Report

in the
City of Fort Bragg

October 6, 2015

Table of Contents

Executive Summary	1
Introduction.....	2
Transportation Setting.....	4
Capacity Analysis	8
Alternative Modes	21
Access and Circulation.....	22
Conclusions and Recommendations.....	24
Study Participants and References.....	25

Figures

1. Study Area and Lane Configurations.....	3
2. Existing Traffic Volumes.....	11
3. Future Traffic Volumes	13
4. Site Plan	16
5. Project Traffic Volumes.....	17

Tables

1. Collision Rates at the Study Intersections.....	5
2. Bicycle Facility Summary	7
3. Intersection Level of Service Criteria	8
4. Automobile Level of Service Criteria	9
5. Existing Peak Hour Intersection Levels of Service	10
6. Existing Peak Hour Roadway Segment Levels of Service	12
7. Future Peak Hour Intersection Levels of Service	14
8. Future Peak Hour Roadway Segment Levels of Service	14
9. Trip Generation Summary	15
10. Existing and Existing plus Project Peak Hour Intersection Levels of Service	18
11. Future and Future plus Project Peak Hour Intersection Levels of Service	19
12. Existing and Existing plus Project Peak Hour Roadway Segment Levels of Service.....	20
13. Future and Future plus Project Peak Hour Roadway Segment Levels of Service.....	20

Appendices

A. Collision Rate Calculations
B. Intersection Level of Service Calculations
C. Roadway Segment Level of Service Calculations
D. Turn Lane Warrants

Executive Summary

The proposed project is a 66-room hotel with ancillary facilities such as a restaurant, cocktail lounge and meeting space. On average, the project would be expected to generate 817 trips on a weekday, including 40 during the p.m. peak hour. On the weekend an average of 48 trips would be generated during the midday peak hour.

The study area included eight intersections along SR 1 (Main Street) between the site and Pine Street. A review of the collision histories for the intersections as well as the segment in which the project site is located indicate that most locations have collision rates that are below the Statewide average for similar facilities, and where the rates are above average, excessive speed was the predominant primary collision factor. Additional speed enforcement as resources are available is suggested.

All eight of the study intersections are currently operating at LOS C or better overall. Continued acceptable operation is projected with project trips added to current volumes as well as under anticipated Future volumes without and with the project. It is noted that LOS D or E operation on stop-controlled side-street approaches is not considered unacceptable under the Caltrans standards that were applied, and with a maximum average delay of less than 50 seconds, operation is expected to remain well within the limits that are considered tolerable by most drivers.

Operation of SR 1 was also considered, and is acceptable at LOS C under current conditions and with project traffic added. Under projected future volumes and with project traffic included operation is expected to remain at the threshold between LOS C and LOS D, which is considered acceptable by Caltrans.

Highway 1 currently has no pedestrian, bicycle or transit facilities serving the project site, though long-range plans include widening to provide a 4-foot shoulder. The project should be coordinated with these plans to ensure that either adequate right-of-way is dedicated, or that the shoulder is constructed along the project's frontage. Further, bike parking should be provided to meet the City's zoning requirements.

Access to the site is proposed via two driveways on SR 1. Both driveways would have full access, with left turns and right turns allowed both inbound and outbound. Turn lanes from SR 1 to the driveway are not warranted due to volumes or sight distance issues, and are not recommended. Sight distance along SR 1 is adequate both from and to both driveways.

Introduction

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with development of a proposed Avalon Inn to be located on the west side of SR 1 at the northerly end of the City of Fort Bragg. The traffic study was completed in accordance with the criteria established by the City of Fort Bragg, includes a study area set by the City, and is consistent with standard traffic engineering techniques.

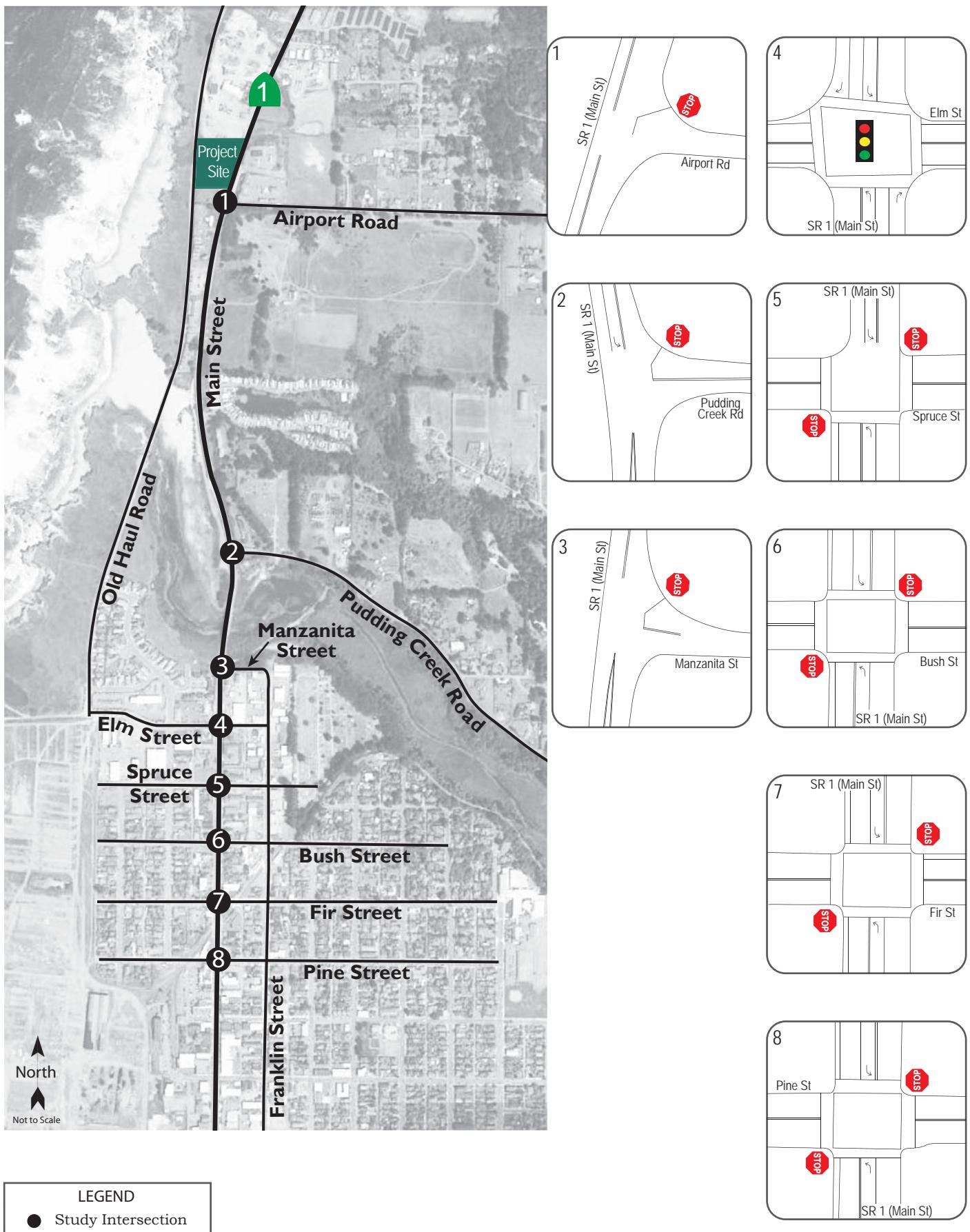
Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required in order to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The proposed Avalon project would be a 66-room hotel with a conference room, restaurant with cocktail bar and lounge. The project site location is shown in Figure 1.





Traffic Impact Study for The Avalon
Figure 1 – Study Area and Lane Configurations

Transportation Setting

Operational Analysis

Study Area and Periods

The study area included the following intersections:

1. SR 1/Airport Road
2. SR1/Pudding Creek Road
3. SR 1/East Manzanita Street
4. SR 1/Elm Street
5. SR 1/Spruce Street
6. SR 1/Bush Street
7. SR 1/Fir Street
8. SR 1/Pine Street

Operating conditions during the weekday p.m. and Saturday midday peak periods were evaluated as these time periods reflect the highest traffic volumes area-wide and for the proposed project. The weekday evening peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion of the day during the homeward bound commute, while the weekend midday peak occurs between 12:00 and 2:00 p.m.

Study Intersections

SR 1/Airport Road is a tee-intersection with a stop control on the terminating east leg of Airport Road. There are no crosswalks.

SR 1/Pudding Creek Road is a tee intersection with a stop control on Pudding Creek Road, which forms the east leg.

SR 1/East Manzanita Street is a tee intersection with East Manzanita Street stop-controlled.

SR 1/Elm Street is a four-way signalized intersection. There are crosswalks on all four legs of the intersection. There is protected left turn phasing on SR 1.

SR 1/Spruce Street is a two-way stop controlled intersections with stop signs on the Spruce Street approaches. There are crosswalks on the south, east, and west legs of the intersection.

SR 1/Bush Street is a two-way stop controlled intersections with Bush Street stop-controlled. There are crosswalks on all four legs of the intersection.

SR 1/Fir Street is a two-way stop controlled intersections with stop signs on the Fir Street approaches. All four legs of the intersection have marked crosswalks.

SR 1/Pine Street has two-way stop controls on the Vine Street approaches and crosswalks on all four legs of the intersection.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Study Roadway

SR 1 is a north-south minor arterial road with a posted speed limit of 45 miles per hour (mph) as it enters the study area from the north. The speed limit drops to 35 mph between Manzanita Street and Spruce Street where it changes to 25 mph through the downtown core. SR 1 varies from two lanes (one lane in each direction) separated by a double yellow line to three lanes, including a center turn lane. Traffic counts obtained in July 2015 near the project site indicate that SR 1 carried about 8,500 vehicles per day on Thursday, with 9,100 vehicles on Friday, 8,700 vehicles per day on Saturday, and 7,700 vehicles per day on Sunday. On average, SR 1 carries an ADT of about 8,500 vehicles per day.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 1, 2009 through December 31, 2013.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2010 Collision Data on California State Highways*, California Department of Transportation (Caltrans). The only location with a rate considerably higher than the statewide average is at the intersection of SR 1/Pine Street. A review of the records indicates that five of the seven crashes reported at this location included two southbound vehicles, of which four were rear-end crashes and many had “unsafe speed” as the primary collision factor (PCF). The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2009-2013)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
SR 1/Airport Rd	1	0.06	0.18
SR 1/Pudding Creek Rd	2	0.10	0.18
SR 1/E Manzanita Rd	1	0.05	0.18
SR 1/Elm St	4	0.17	0.27
SR 1/Spruce St	1	0.05	0.15
SR 1/Bush St	4	0.17	0.15
SR 1/Fir St	3	0.13	0.15
SR 1/Pine St	7	0.28	0.15

Note: c/mve = collisions per million vehicles entering

Collision rates for the study segments were also compared to statewide averages for similar facilities. A 1.5-mile study segment (three-quarters of a mile on either side of the driveway) had 35 reported collisions over a five-year study period. This translates to a collision rate of 1.49 collisions per million vehicle miles (c/mvm), which is slightly higher than the statewide average rate of 1.29 c/mvm. The most evident trend in the collisions on this segment is that about half (16 of 35) involved a single vehicle generally hitting a fixed object, with “unsafe speed” or “improper turning” cited most frequently as the primary collision factor.

Finding: The collision rates for both intersections and the study segment are generally consistent with statewide averages for similar facilities. However, it appears that many drivers may be traveling at excessive speeds, contributing to the incidence of crashes.

Recommendation: To the extent that resources are available, the City of Fort Bragg should increase speed limit enforcement.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, the existing network of sidewalks, crosswalks, pedestrian signals, and curb ramps do not provide access for pedestrians in the vicinity of the proposed project site. Existing gaps and obstacles are present along the connecting roadways that impact convenient and continuous access for pedestrians and present safety concerns in those locations.

- **SR 1** – Intermittent sidewalk coverage is provided on SR 1 with significant gaps on both sides of the street north of Elm Street. Sidewalks are provided sporadically along frontages of properties that have been developed north of Spruce Street, but are generally continuous south of that point. Very few curb ramps at side street approaches have been upgraded to achieve compliancy with current ADA standards. Lighting is provided by overhead street lights south of Manzanita Street; there is no street lighting north of Manzanita Street.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path:** a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane:** a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route:** signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project area, there is the Class I Pudding Creek Trail and Class II bike lanes exist on Fir Street between SR 1 and North Harold Street, on Harrison Street between Fir Street and Walnut Street, and on Harold Street from East Fir Street to Maple Street. SR 1 has both Class II bike lanes and Class III bike routes marked in the project area. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *City of Fort Bragg 2009 Bicycle Master Plan*.

Table 2 – Bicycle Facility Summary

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
Pudding Creek Trestle	I/II/III	0.95	E Fir St	City Limits North
Fir St	II	0.41	SR 1	N Harold St
Harrison St	II	0.93	E Fir St	Walnut St
Harold St	II	0.61	E Fir St	Maple St
SR 1	II	0.50	Walnut St	Oak St
SR 1 (southbound)	II	0.35	Spruce St	Laurel St
SR 1	III	0.44	E Fir St	Oak St
Planned				
SR 1	II	1.40	Elm St	City Limits North
Franklin Street	II	0.52	Manzanita St	Pine St

Source: *City of Fort Bragg 2009 Bicycle Master Plan*

Additionally, the *Pacific Coast Bike Route/California Coastal Trail Engineered Feasibility Study* prepared by Alta Planning + Design specifies that the shoulders along the section of SR 1 in front of the project site are to be widened to four feet. Caltrans has already prepared the Project Study Report (PSR) for this project and is seeking funding sources for its construction.

Transit Facilities

The Mendocino Transit Authority (MTA) provides fixed route bus service in Fort Bragg. MTA Local Route 5 provides loop service to destinations throughout the City and stops on Stewart Street between East Elm Street and Manzanita Street. Route 5 operates Monday through Friday with approximately one-hour headways between 7:00 a.m. and 6:00 p.m.

Routes 60 and 65 provide regional service between Fort Bragg and surrounding communities. Each route stops on Stewart Street between Elm Street and Manzanita Street. Route 65 operates seven days a week with one bus in either direction each day. Route 60 operates Monday through Friday with approximately one-hour headways.

Two bicycles can be carried on most MTA buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on MTA buses at the discretion of the driver.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. MTA Paratransit is designed to serve the needs of individuals with disabilities within Fort Bragg and the greater Fort Bragg area.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2000. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side-street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections that are currently controlled by a traffic signal, or may be in the future, were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing.

The ranges of delay associated with the various levels of service are indicated in Table 3.

Table 3 – Intersection Level of Service Criteria

LOS	Two-Way Stop-Controlled	Signalized
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2000

Roadway Segment Level of Service Methodology

The roadway segment Level of Service methodology found in Chapter 17, "Urban Street Segments," of the *Highway Capacity Manual* is the basis of the automobile LOS analysis. This method does not address the capacity of a facility, but rather determines a Level of Service based the calculated percentage of the street's base free-flow speed. In essence, congestion occurs as traffic volumes increase, and the overall travel speed is reduced due to increased delay. Therefore, the slower the speed, the lower that speed is as a percentage of free-flow speed, and the lower the Level of Service.

The relationship between Level of Service and percentages of free-flow speed is presented in Table 4.

Table 4 – Automobile Level of Service Criteria

Level of Service	Travel Speed as a Percentage of Base Free-Flow Speed (%)
A	>85
B	>67-85
C	>50-67
D	>40-50
E	>30-40
F	≤30

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Traffic Operation Standards

Although SR 1 serves as Main Street through the City of Fort Bragg, it is under the jurisdiction of Caltrans. The Caltrans standard of significance was therefore applied.

Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D. Based on previous discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay, not the delay associated with any single movement or approach. Under this approach, if one movement experiences very high delay and also has moderate to high traffic volumes, the overall delay and level of service should reflect the critical nature of the condition. However, if one movement is expected to experience high delay, but has very low traffic volumes, the overall intersection operation will likely still meet Caltrans standards.

On sections of certain arterial streets it is typical to have all of the side streets operating at LOS E or F with long traffic delays, even where side street volumes are very low. In fact, it may be operationally, physically, and/or financially infeasible to provide mitigation which would allow Level of Service D conditions or better from all side streets during peak hours. The most typical mitigation measure used to improve operation for the side street is a traffic signal, and it is both operationally and financially undesirable to provide a traffic signal at every intersection along most street segments. For these reasons mitigation measures were considered only if LOS F conditions were projected for minor movements at unsignalized intersections.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday p.m. and weekend midday peak periods. This condition does not include project-generated traffic volumes. As requested by City staff, volume data was collected in July 2015 to reflect peak summertime activity.

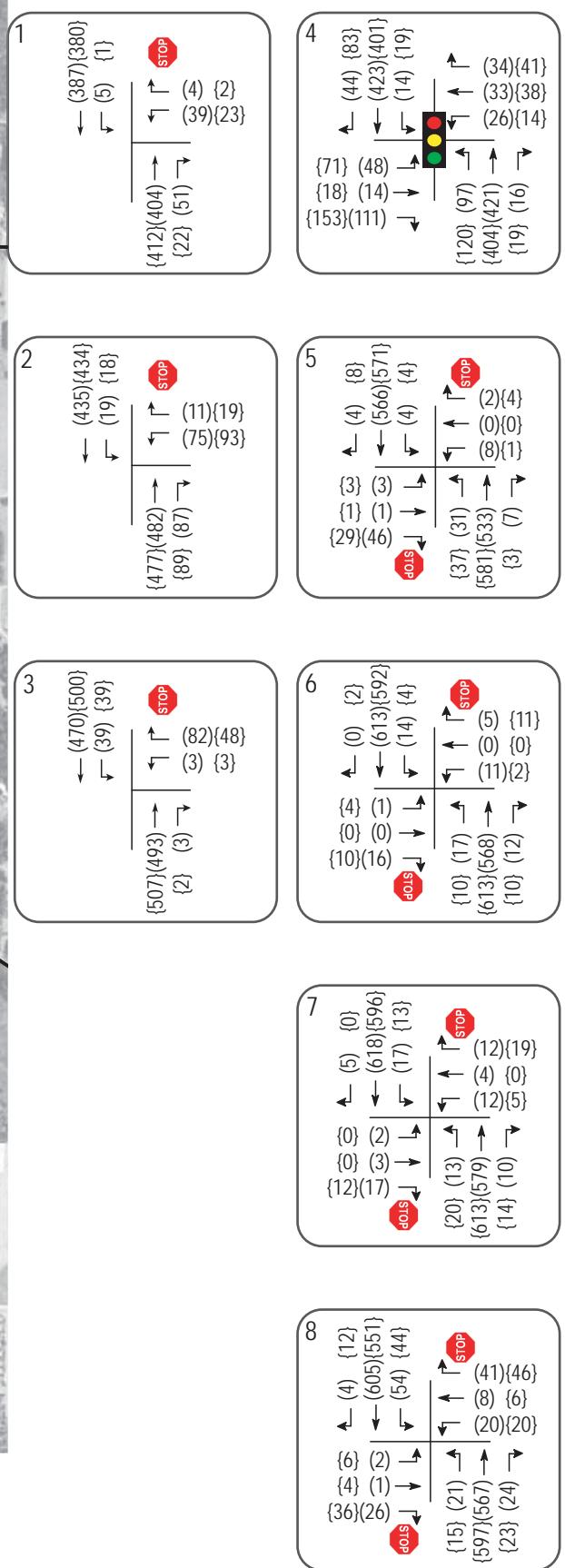
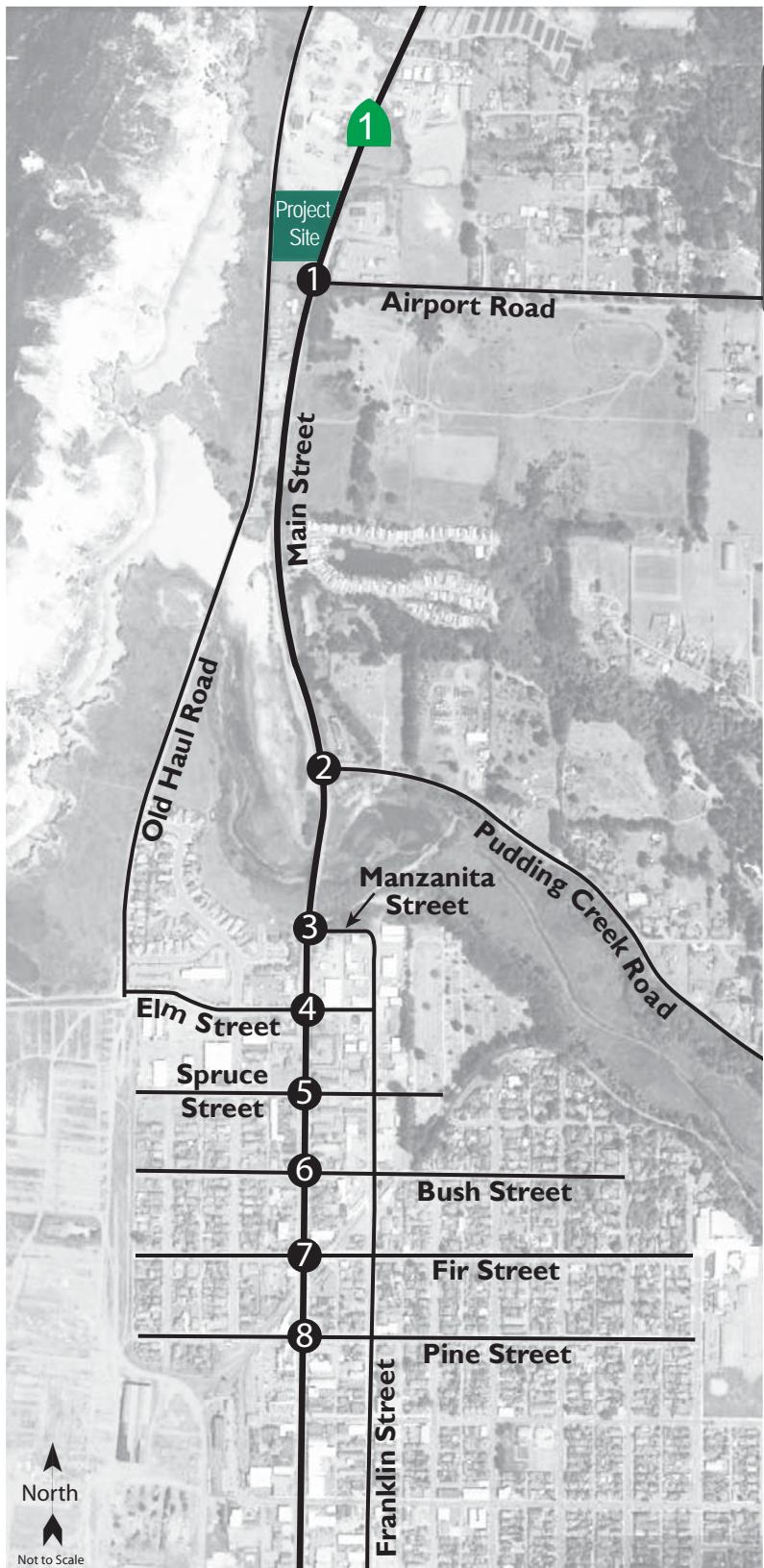
Intersection Levels of Service

Under existing conditions, all eight study intersections are operating acceptably at LOS C or better overall. It is noted that LOS D operation on the stop-controlled side-street approaches is considered acceptable under the applied standards. Existing intersection Level of Service calculations are summarized in Table 5, the existing traffic volumes are shown in Figure 2, and copies of the Level of Service calculations are provided in Appendix B.

Table 5 – Existing Peak Hour Intersection Levels of Service

Study Intersection Approach	Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS
1. SR 1/Airport Rd <i>Westbound</i>	0.9	A	0.5	A
	17.4	C	16.3	C
2. SR 1/Pudding Creek Rd <i>Westbound</i>	2.2	A	2.9	A
	26.9	D	27.4	D
3. SR 1/Manzanita St <i>Westbound</i>	1.3	A	0.9	A
	13.3	B	13.4	B
4. SR 1/Elm St	18.6	B	21.4	C
5. SR 1/Spruce St <i>Westbound</i> <i>Eastbound</i>	1.1	A	0.8	A
	31.4	D	18.0	C
	14.8	B	16.3	C
6. SR 1/Bush St <i>Westbound</i> <i>Eastbound</i>	0.8	A	0.5	A
	29.9	D	16.8	C
	14.2	B	19.8	C
7. SR 1/Fir St <i>Westbound</i> <i>Eastbound</i>	1.2	A	0.7	A
	29.7	D	19.2	C
	18.5	C	12.8	C
8. SR 1/Pine St <i>Westbound</i> <i>Eastbound</i>	2.6	A	2.8	A
	34.2	D	31.8	D
	16.7	C	20.7	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;
Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*



Traffic Impact Study for The Avalon
Figure 2 – Existing Traffic Volumes

Roadway Segment Levels of Service

The segment of SR 1 within one-half mile on either side of the site was selected for evaluation. Under existing conditions, SR 1 is operating acceptably at LOS C. A summary of the roadway segment level of service calculations is shown in Table 6, and copies of the Level of Service calculations are provided in Appendix C.

Table 6 – Existing Peak Hour Roadway Segment Levels of Service

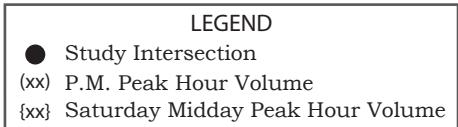
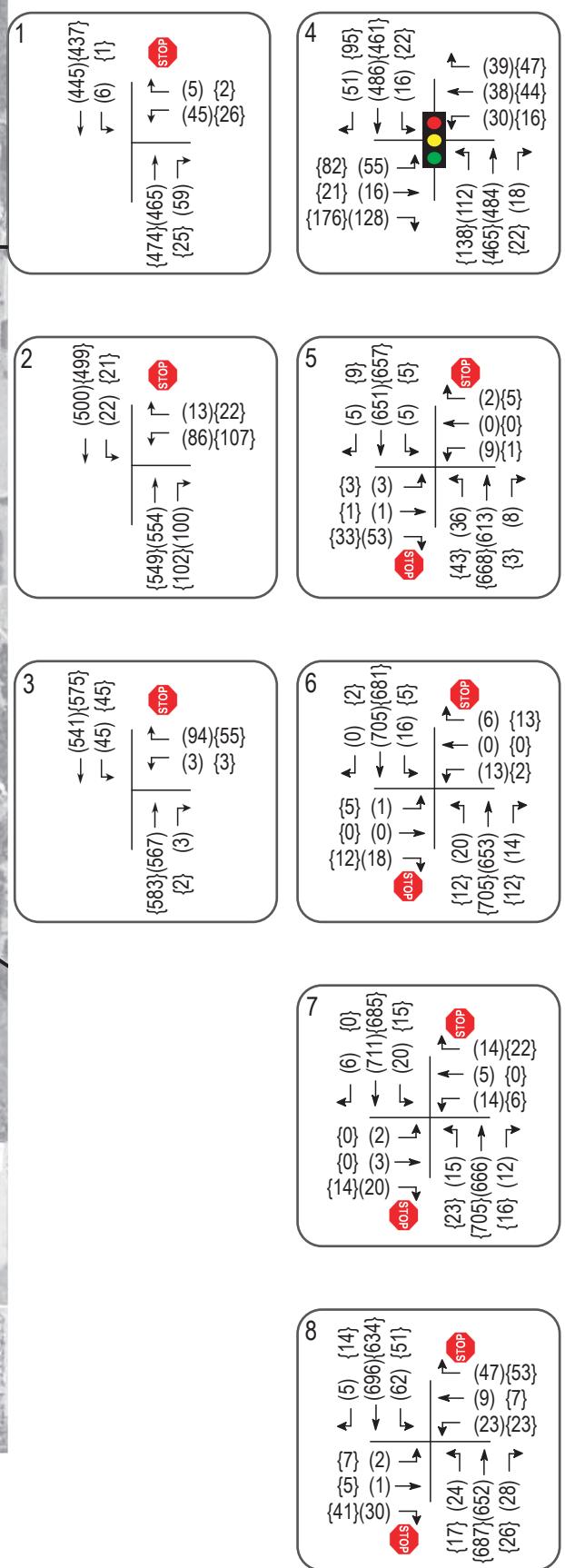
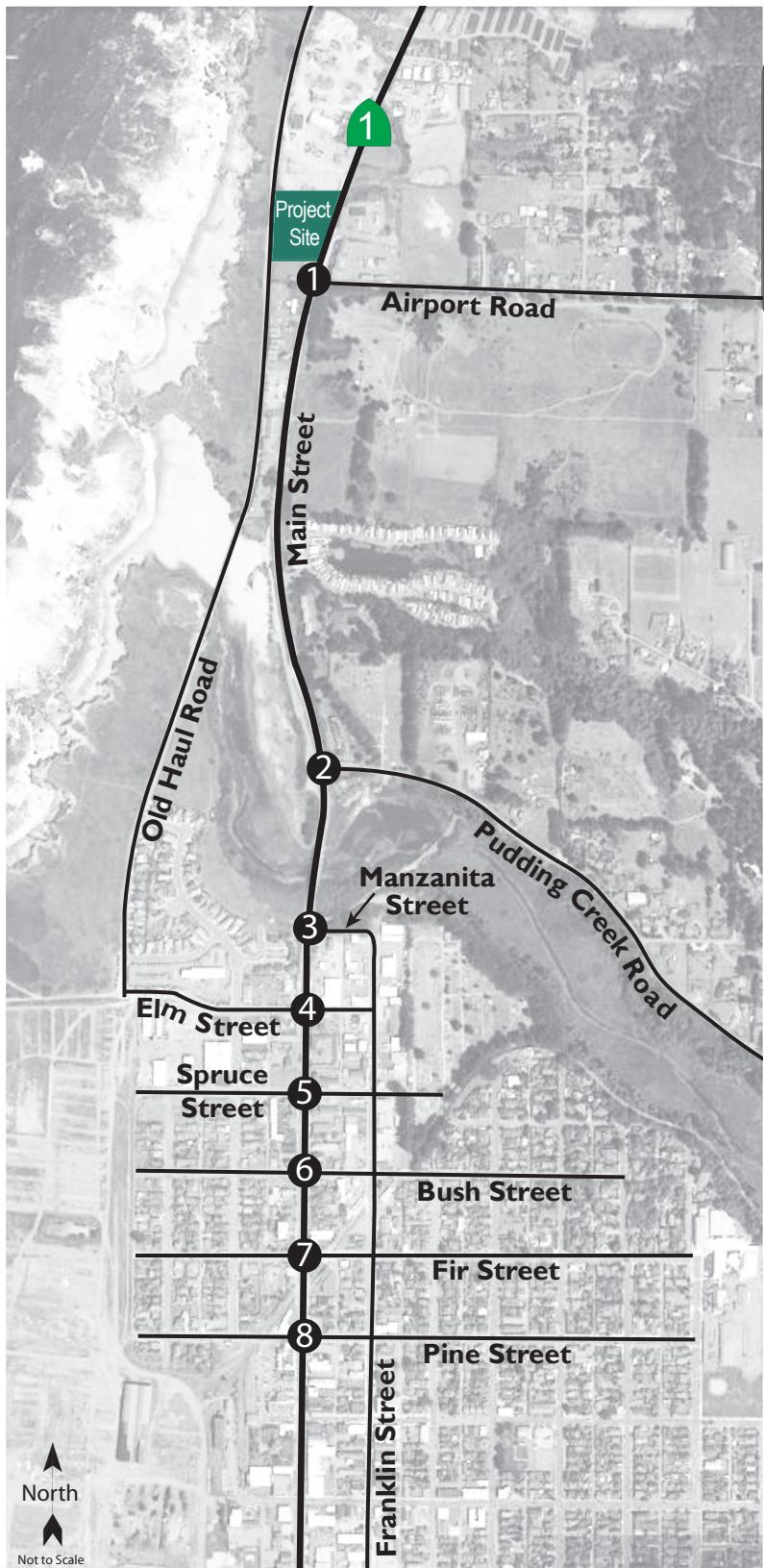
SR 1	Weekday PM Peak		Weekend MD Peak	
	PTSF	LOS	PTSF	LOS
Northbound	65.2	C	65.5	C
Southbound	65.4	C	66.1	C

Notes: PTSF = Percent Time Spent Following; LOS = Level of Service

Future Conditions

Caltrans District 1 publishes growth factors that indicate the anticipated future increase in volume on highways in Mendocino County, including SR 1. Assuming a 20-year straight-line growth pattern, a growth Factor of 1.15, or about 1 percent annually for a period of 20 years) was applied to all study intersections and study segments based on the information from the 2014 Growth Factor Map.

Under the anticipated Future volumes, and assuming that existing geometrics are retained, the study intersections are expected to operate acceptably at LOS C or better. It is again noted that delays indicating LOS D or worse operation on side street approaches is not considered significant unless it is sufficiently high to cause the overall delay to degrade to an unacceptable level. As can be seen from the study results, five of the seven unsignalized study intersections would experience delays exceeding 25 seconds during one or both peak hours evaluated, which is the threshold for LOS D operation. It can reasonably be assumed that nearly all of the unsignalized intersections along SR 1 in the City of Fort Bragg experience such delays, but that does not necessarily mean that physical improvements are needed to address this condition. Adding a traffic signal at every intersection to achieve LOS C or better operation for every movement would ultimately result in much poorer operation overall as drivers would need to stop regularly as they travel along SR 1. It is more reasonable to anticipate that, should delays on any specific side street approach become intolerable, drivers will take advantage of the grid network street system to take access at a signalized location. Future volumes are shown in Figure 3 and operating conditions are summarized in Table 7.



Traffic Impact Study for The Avalon
Figure 3 – Future Traffic Volumes

Table 7 – Future Peak Hour Intersection Levels of Service

Study Intersection Approach	Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS
1. SR 1/Airport Rd <i>Westbound</i>	1.0 19.1	A C	0.5 17.7	A C
2. SR 1/Pudding Creek Rd <i>Westbound</i>	2.6 31.1	A D	3.6 35.2	A E
3. SR 1/Manzanita St <i>Westbound</i>	1.4 14.0	A B	1.0 13.8	A B
4. SR 1/Elm St	18.8	B	22.1	C
5. SR 1/Spruce St <i>Westbound</i> <i>Eastbound</i>	1.2 36.7 15.9	A E C	0.8 18.9 17.0	A C C
6. SR 1/Bush St <i>Westbound</i> <i>Eastbound</i>	0.9 35.6 15.2	A E C	0.5 17.7 21.3	A C C
7. SR 1/Fir St <i>Westbound</i> <i>Eastbound</i>	1.3 34.3 20.1	A D C	0.7 20.9 13.2	A C B
8. SR 1/Pine St <i>Westbound</i> <i>Eastbound</i>	3.1 44.7 18.4	A E C	3.3 39.5 23.3	A E C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;
 Results for minor approaches to two-way stop-controlled intersections
 are indicated in *italics*

Under projected future volumes, the roadway study segment is expected to continue operating at or above the threshold between LOS C and D, with operating conditions on weekends 0.1 percent above the threshold between LOS C and LOS D during the weekend peak period, which is acceptable under the standards applied. These results are summarized in Table 8.

Table 8 – Future Peak Hour Roadway Segment Levels of Service

SR 1	Weekday PM Peak		Weekend MD Peak	
	PTSF	LOS	PTSF	LOS
Northbound	68.8	C	70.1	D
Southbound	68.9	C	69.7	C

Notes: PTSF = Percent Time Spent Following; LOS = Level of Service

Project Description

The proposed project consists of a 66-room hotel including a 2,645 square foot conference room, 689 square foot restaurant and a 561 square foot cocktail bar and lounge on a currently vacant site. The site would be accessed via two driveways on SR 1. The proposed project site plan is shown in Figure 4.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012 for "Hotel" (ITE LU 310). The description of Hotel land use states "Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting or banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops." The proposed conference room, restaurant and cocktail bar, which would serve primarily guests, but also non-guests, were therefore assumed to be captured in the standard trip rates. The site is currently vacant and therefore does not generate any existing trips.

The expected trip generation potential for the proposed project is indicated in Table 9. The 66-room hotel is expected to generate an average of 539 trips per day, including 40 trips during the weekday p.m. peak hour and 48 during the Saturday midday peak hour.

Table 9 – Trip Generation Summary

Land Use	Units	Daily		PM Peak Hour				Saturday MD Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Hotel	66 rooms	8.17	539	0.60	40	20	20	0.72	48	27	21

Source: *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers, 2012

Trip Distribution

The pattern used to allocate new project trips to the street network was based on likely travel patterns given the site's location. It was assumed that 80 percent of trips would be to/from the south and the remaining 20 percent to/from the north. Because trips to and from the south are expected to be from origins and to destinations south of Pine Street, all of the project-generated trips were assigned to routes through the study intersections.

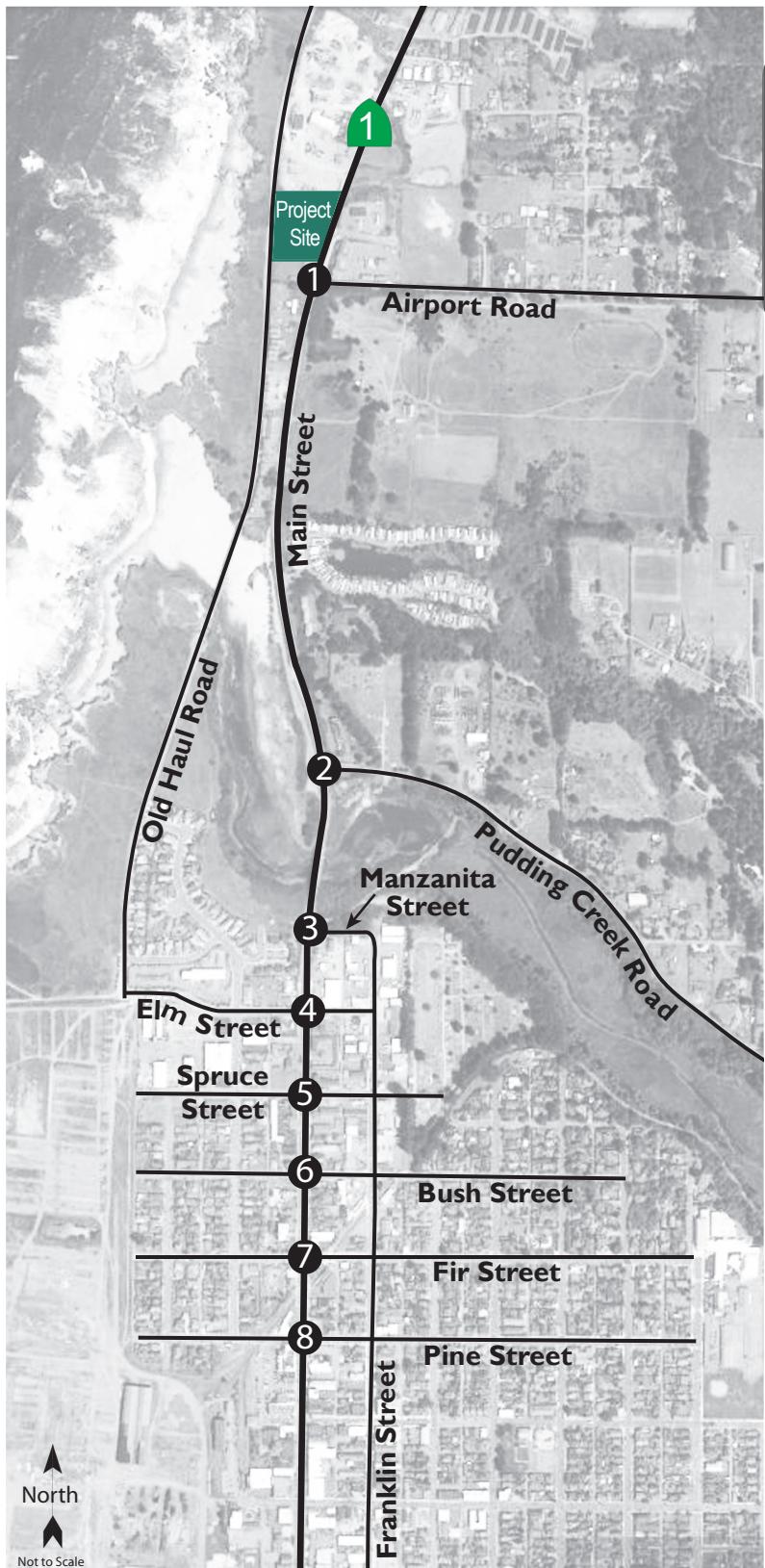
Intersection Operation

Existing plus Project Conditions

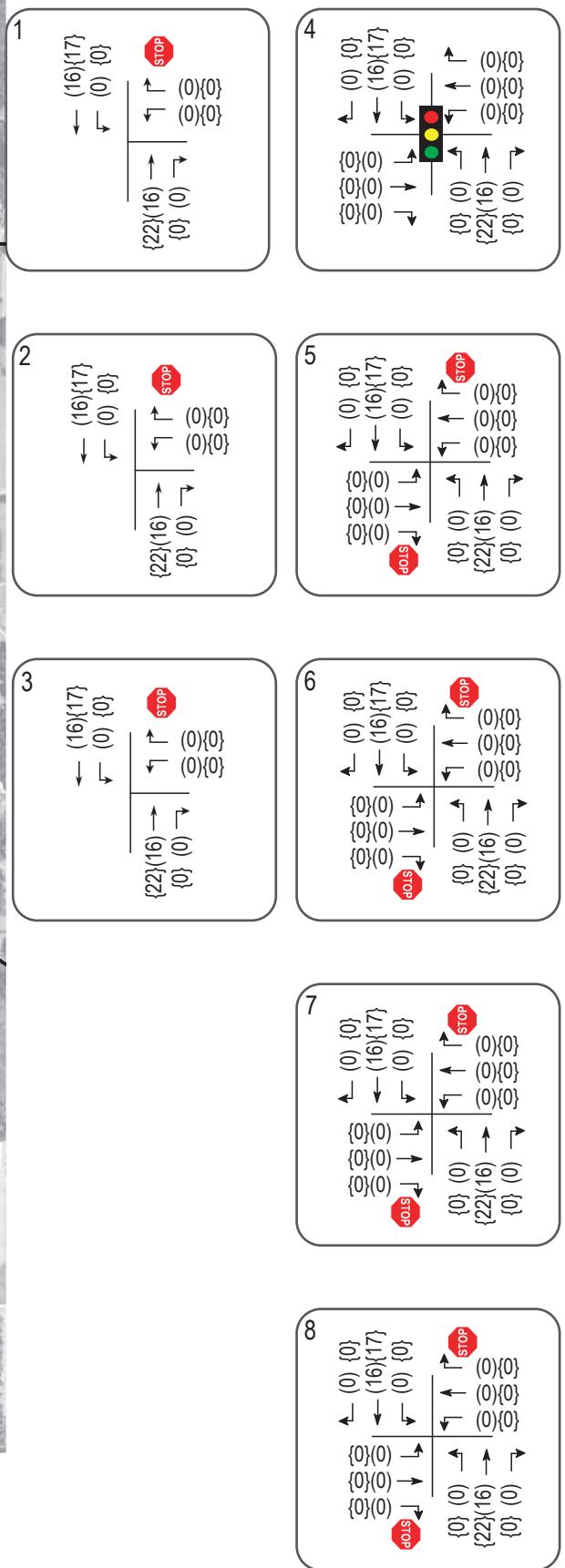
Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue operating acceptably during both peak hours evaluated. These results are summarized in Table 10. Project traffic volumes are shown in Figure 5.

Traffic Impact Study for The Avalon
Figure 4 – Site Plan




LEGEND

- Study Intersection
- (xx) P.M. Peak Hour Volume
- {xx} Saturday Midday Peak Hour Volume



Traffic Impact Study for The Avalon
Figure 5 – Project Traffic Volumes

Table 10 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection Approach	Existing Conditions				Existing plus Project			
	Weekend PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 1/Airport Rd <i>Westbound</i>	0.9	A	0.5	A	0.9	A	0.5	A
	17.4	C	16.3	C	18.1	C	17.0	C
2. SR 1/Pudding Creek Rd <i>Westbound</i>	2.2	A	2.9	A	2.3	A	3.0	A
	26.9	D	27.4	D	28.5	D	29.6	D
3. SR 1/Manzanita St <i>Westbound</i>	1.3	A	0.9	A	1.3	A	0.9	A
	13.3	B	13.4	B	13.5	B	13.8	B
4. SR 1/Elm St	18.6	B	21.4	C	18.4	B	21.2	C
5. SR 1/Spruce St <i>Westbound</i> <i>Eastbound</i>	1.1	A	0.8	A	1.1	A	0.8	A
	31.4	D	18.0	C	33.0	D	18.7	C
	14.8	B	16.3	C	15.2	C	16.8	C
6. SR 1/Bush St <i>Westbound</i> <i>Eastbound</i>	0.8	A	0.5	A	0.8	A	0.5	A
	29.9	D	16.8	C	31.3	D	17.4	C
	14.2	B	19.8	C	14.5	B	20.7	C
7. SR 1/Fir St <i>Westbound</i> <i>Eastbound</i>	1.2	A	0.7	A	1.2	A	0.7	A
	29.7	D	19.2	C	31.3	D	20.0	C
	18.5	C	12.8	B	19.1	C	13.0	B
8. SR 1/Pine St <i>Westbound</i> <i>Eastbound</i>	2.6	A	2.8	A	2.6	A	2.9	A
	34.2	D	31.8	D	36.5	E	34.4	D
	16.7	C	20.7	C	17.2	C	21.7	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;

Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

It should be noted that with the addition of project-related traffic volumes, average delay at the intersection of SR1/Elm Street decreases during both the weekday p.m. and weekend midday peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The project adds traffic predominantly to the through movement, which has an average delay that is lower than the average for the intersection as a whole, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project actually improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers would experience little, if any, change in conditions as a result of the project.

Finding: The study intersections are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic, with the exception of SR 1 and Pine Street where the side street operation would decrease from LOS D to LOS E during the weekday p.m. peak period. This does not, however, constitute a significant impact as overall intersection operation would remain at LOS A.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, the study intersections are expected to operate acceptably overall, though many of the minor approaches would continue to experience delays in excess of 25 seconds, or at LOS D or worse. However, as noted previously, this is acceptable under the Caltrans standards applied. The Future plus Project operating conditions are summarized in Table 11.

Table 11 – Future and Future plus Project Peak Hour Intersection Levels of Service

Study Intersection <i>Approach</i>	Future Conditions				Future plus Project			
	Weekend PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 1/Airport Rd <i>Westbound</i>	1.0	A	0.5	A	1.0	A	0.5	A
	19.1	C	17.7	C	19.9	C	18.4	C
2. SR 1/Pudding Creek Rd <i>Westbound</i>	2.6	A	3.6	A	2.6	A	3.8	A
	31.1	D	35.2	E	33.0	D	38.5	E
3. SR 1/Manzanita St <i>Westbound</i>	1.4	A	1.0	A	1.4	A	0.9	A
	14.0	B	13.8	B	14.3	B	14.2	B
4. SR 1/Elm St	18.8	B	22.1	C	18.6	B	22.0	C
5. SR 1/Spruce St <i>Westbound</i>	1.2	A	0.8	A	1.2	A	0.8	A
	36.7	E	18.9	C	38.6	E	19.6	C
	15.9	C	17.0	C	16.3	C	17.5	C
6. SR 1/Bush St <i>Westbound</i>	0.9	A	0.5	A	0.9	A	0.5	A
	35.6	E	17.7	C	37.4	E	18.3	C
	15.2	C	21.3	C	15.5	C	22.1	C
7. SR 1/Fir St <i>Westbound</i>	1.3	A	0.7	A	1.3	A	0.7	A
	34.3	D	20.9	C	36.1	D	21.8	C
	20.1	C	13.2	B	20.7	C	13.4	B
8. SR 1/Pine St <i>Westbound</i>	3.1	A	3.3	A	3.3	A	3.4	A
	44.7	E	39.5	E	48.1	E	43.0	E
	18.4	C	23.3	C	19.0	C	24.5	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;
Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Finding: The addition of project-generated traffic to projected Future volumes would have a less-than-significant traffic impact on the eight study intersections. As noted for Existing plus Project conditions, the average delay would sometimes be reduced upon the addition of project trips, as indicated at the intersections of SR 1/Manzanita Street and SR 1/El Street. This is attributable to the project adding trips only to movements that have delays which are below the average for the intersection.

Roadway Segment Operation

Existing plus Project Conditions

Under Existing plus Project volumes the study roadways segments are expected to operate acceptably during both peak periods evaluated. These results are summarized in Table 12.

Table 12 – Existing and Existing plus Project Peak Hour Roadway Segment Levels of Service

SR 1	Existing Conditions				Existing plus Project			
	Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	PTSF	LOS	PTSF	LOS	Speed	LOS	Speed	LOS
Northbound	65.2	C	65.5	C	65.7	C	67.0	C
Southbound	65.4	C	66.1	C	65.1	C	68.1	D

Notes: PTSF = Percent Time Spent Following; LOS = Level of Service

Finding: The study roadways are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic, indicating a less-than-significant impact.

Future plus Project Conditions

With project-generated traffic added to the anticipated Future volumes the study roadways are expected to operate acceptably at or above the LOS C/D threshold. The Future plus Project operating conditions are summarized in Table 13.

Table 13 – Future and Future plus Project Peak Hour Roadway Segment Levels of Service

SR 1	Future Conditions				Future plus Project			
	Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	PTSF	LOS	PTSF	LOS	PTSF	LOS	PTSF	LOS
Northbound	68.8	C	70.1	D	69.0	C	69.4	C
Southbound	68.9	C	69.7	C	69.0	C	72.7	D

Notes: PTSF = Percent Time Spent Following; LOS = Level of Service

Finding: The study roadway segment is expected to continue operating acceptably at or above the threshold between LOS C and D during both peak periods evaluated. It is noted that while the northbound direction is expected to operate at LOS D during the weekend midday peak without project traffic added, it is the southbound direction that is projected to operate at LOS D with project traffic added. Since the volumes were obtained during peak summertime conditions and the growth rate is generally conservative, it is reasonable to conclude that operation would remain at LOS C or better for many years into the future, and also for most of the year.

Alternative Modes

Alternative Modes

Pedestrian Facilities

Given the relatively rural nature of the site, it is anticipated that few project patrons or employees would want to walk and/or use transit to reach the project site. Sidewalks do not exist along the project frontage, or along frontages on adjacent and nearby developed sites, except for a short segment directly across SR 1 from the site along the frontage of the Caltrans maintenance station. No other pedestrian facilities exist near the site.

Finding: While pedestrian activity is unlikely to be substantial, pedestrian facilities to access the project site, and also within the site itself, should be provided for current and potential future use.

Recommendation: A pathway or the planned 4-foot shoulders should be installed along the SR 1 frontage.

Bicycle Facilities

There are existing bicycle facilities, including bike lanes and bike routes, on SR 1 through part of the City of Fort Bragg, though the shoulder width along the project frontage is inadequate to accommodate bicyclists. Future plans for SR 1 include sufficient widening to provide 4-foot shoulders which could serve bicycle traffic.

Bicycle Storage

The project site plan does not identify the provision of bicycle parking or storage facilities. Per Section 18.36.060 of the City's Municipal Code, bicycle parking for non-residential uses is to be equal to one bike parking space for every ten vehicle spaces.

Finding: Bicycle facilities serving the project site are inadequate.

Recommendation:

- The project applicant should coordinate efforts with Caltrans to provide the planned 4-foot shoulder along the project frontage, including dedication of right-of-way if appropriate. As an alternative, the shoulder could be provided as part of the project.
- Off-street bicycle parking should be provided at a ratio of one bike rack space for every ten vehicle spaces.

Transit

There are no transit routes that currently serve the site; the nearest MTA bus stop is on Stewart Street, which is a walking distance of more than a mile, well in excess of the quarter-mile distance typically considered as the limit most patrons will walk. Limited potential for transit use would be anticipated given the type of use as well as its location.

Finding: There are no transit facilities currently serving the project site. It is understood from communication provided by MTA that transit service is not expected to be extended north towards the project site.

Recommendation: Though transit service is inadequate, there is no action that the applicant can take to change this condition; as such nothing is recommended.

Access and Circulation

Site Access

Access to the project site would occur via two driveways located on the west side of SR 1. Both driveways are proposed to have full access, accommodating turns in both directions both inbound and outbound.

Sight Distance

At unsignalized intersections a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Set-back for the driver on the crossroad shall be a minimum of 15 feet, measured from the edge of the traveled way.

Sight distance along SR 1 at the project driveway was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance for driveway approaches is based on stopping sight distance, with the approach travel speed used as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

A short sample of approach speeds indicates critical (85th percentile) speeds of 49 mph northbound and 51 mph southbound. Sight distance at the proposed driveway locations was field measured. Based on a design speed of 50 mph, the minimum stopping sight distance needed is 430 feet. Available sight lines are in excess of 600 feet in both directions from the proposed driveway as well as for a following driver; this sight distance is therefore adequate for speeds in excess of 60 mph.

Finding: Sight distance at the driveway locations is adequate.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lane on SR 1 at the project driveway was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues. Based on our research and discussions with Caltrans staff, this methodology is consistent with the "Guidelines for Reconstruction of Intersections," August 1985, which was referenced in Section 405.2, Left-turn Channelization, of previous editions of the Caltrans *Highway Design Manual*, though this reference has been deleted from the most recent edition of this manual.

A review of current, peak month volumes as well as project future volumes, and assuming all inbound movements occur at a single driveway even though two are proposed, indicates that a left-turn lane is not warranted on SR 1 at the project driveways during either of the peak periods evaluated. Further, they are not expected to be warranted under volumes projected for a 20-year horizon. Copies of the analysis spreadsheets are provided in Appendix D.

Right-Turn Lane Warrants

The need for a right-turn lane or taper was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985. A right-turn lane would consist of a lane installed to the right of the travel lane and would be a minimum of ten feet wide, plus a shoulder where not adjacent to a curb. A right-turn taper is a shoulder area that gets progressively wider as the motorist drives toward the intersection. Both improvements are meant to provide an area for motorists turning right to move out of the traffic lane without impeding through traffic. The warrants were evaluated using existing and future volumes both with and without the project.

The need for a right-turn lane or taper on SR 1 at the project driveways was also evaluated. Using the same criteria contained in the *Intersection Channelization Design Guide*, the warrants were evaluated using both existing and future Saturday midday peak volume. Based on these assumptions, no additional facilities in the form of either a right-turn lane or right-turn taper would be warranted.

Finding: Left-turn lanes and right-turn lanes or tapers on SR 1 at the project driveways are neither warranted nor recommended.

Conclusions and Recommendations

Conclusions

- The proposed 66-room hotel would be expected to generate an average of 817 daily trips on a weekday, including 40 during the p.m. peak hour. An average of 48 trips are projected for the weekend midday peak hour.
- The collision analysis indicates that SR 12/Pine Street as well as the study segment of SR 1 experienced collisions at a rate that exceed Statewide averages for similar facilities. In both cases, unsafe speed was cited as a primary collision factor for many of the incidents.
- Eight intersections along SR 1 were evaluated under Existing, Existing plus Project, Future and Future plus Project volumes, resulting in acceptable LOS C or better operation overall for all scenarios, indicating a less-than-significant project impact. While some side street approaches are currently or are expected to operate at LOS D or E, this is considered acceptable under the Caltrans standards applied. Further, the maximum projected average delay is 48.1 seconds, a wait time that is reasonable for a vehicle entering a major arterial or highway.
- SR 1 near the project site is currently operating at LOS C in both directions, and would continue doing so with project trips added. Traffic operation is expected to hover near the LOS C/D threshold, which is considered acceptable by Caltrans, under projected future volumes, without and with project trips added. The project's impact is therefore less-than-significant.
- There are currently no pedestrian, bicycle or transit facilities serving the project site, though Caltrans has plans to widen the shoulder along the site's frontage on SR 1 to 4 feet.
- Sight distance along SR 1 is adequate in both directions from the site driveway as well as for drivers on SR 1 approaching the driveway.
- Left-turn and right-turn lanes on SR 1 at the site's driveways are not warranted, so are not recommended.

Recommendations

- To the extent that manpower is available, the City of Fort Bragg and/or the California Highway Patrol should increase speed enforcement on SR 1.
- Right-of-way should be dedicated along the frontage to accommodate Caltrans' planned widening of SR 1 to provide a 4-foot shoulder. The wider shoulder could be constructed as part of the project depending on the timing of the Caltrans project.
- Bike parking equivalent to one space for every ten vehicle parking spaces should be provided on the site.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
Technician/Graphics	Deborah J. Mizell
Technician/Design	William Petker, EIT
Engineering Intern	Allison Jaromin
Editing/Formatting	Angela McCoy
Review	Mark Spencer, TE, PTOE

References

- 2010 Collision Data on California State Highways*, California Department of Transportation, 2010
City of Fort Bragg 2009 Bicycle Master Plan, City of Fort Bragg, 2009
Fort Bragg Municipal Code, Code Publishing Corporation, 2014
Highway Capacity Manual, Transportation Research Board, 2000
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Highway Design Manual, 6th Edition, California Department of Transportation, 2012
Intersection Channelization Design Guide, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985
Mendocino Transit Authority, http://www.4mta.org/schedule_maps.html
Pacific Coast Bike Route/California Coastal Trail Engineered Feasibility Study, Alta Planning + Design, February 2013
Statewide Integrated Traffic Records System (SWITRS), California Highway Patrol, 2009-2013
Trip Generation Manual, 9th Edition, Institute of Transportation Engineers, 2012

Communications

- Email from Mike Thomas to Marie Jones, February 7, 2013, regarding need for MTA bus shelter at site
Email from Phil Dow to Amy Wynn, September 30, 2015, regarding potential grant applicant to fund construction of shoulders on SR 1

FBR041

Appendix A

Collision Rate Calculations

DRAFT

Intersection Collision Rate Calculations

City of Fort Bragg

Intersection # 1: SR 1 & Airport Road

Date of Count: Thursday, July 16, 2015

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
ADT: 8900
Start Date: January 1, 2009
End Date: December 31, 2013
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{8,900} \times \frac{x}{365} \times \frac{1,000,000}{5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.06 c/mve	0.0%	100.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 2: SR 1 & Pudding Creek Road

Date of Count: Thursday, July 16, 2015

Number of Collisions: 2
Number of Injuries: 1
Number of Fatalities: 0
ADT: 11100
Start Date: January 1, 2009
End Date: December 31, 2013
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{2}{11,100} \times \frac{x}{365} \times \frac{1,000,000}{5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.10 c/mve	0.0%	50.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculations

City of Fort Bragg

Intersection # 3: SR 1 & E. Manzanita Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 1

Number of Injuries: 1

Number of Fatalities: 0

ADT: 10900

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Tee

Control Type: Stop & Yield Controls

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{10,900} \times \frac{x}{365} \times \frac{1,000,000}{x} \times 5$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.05 c/mve	0.0%	100.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 4: SR 1 & Elm Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 4

Number of Injuries: 2

Number of Fatalities: 0

ADT: 12800

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{4}{12,800} \times \frac{x}{365} \times \frac{1,000,000}{x} \times 5$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.17 c/mve	0.0%	50.0%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculations

City of Fort Bragg

Intersection # 5: SR 1 & Spruce Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 1

Number of Injuries: 0

Number of Fatalities: 0

ADT: 12100

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Stop & Yield Controls

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{12,100} \times \frac{x}{365} \times \frac{1,000,000}{x} \times 5$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.05 c/mve	0.0%	0.0%
Statewide Average*	0.15 c/mve	1.0%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 6: SR 1 & Bush Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 4

Number of Injuries: 1

Number of Fatalities: 0

ADT: 12600

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Stop & Yield Controls

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{4}{12,600} \times \frac{x}{365} \times \frac{1,000,000}{x} \times 5$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.17 c/mve	0.0%	25.0%
Statewide Average*	0.15 c/mve	1.0%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculations

City of Fort Bragg

Intersection # 7: SR 1 & Fir Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 3

Number of Injuries: 0

Number of Fatalities: 0

ADT: 12900

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Stop & Yield Controls

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{3}{12,900} \times \frac{x}{365} \times \frac{1,000,000}{5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.13 c/mve	0.0%	0.0%
Statewide Average*	0.15 c/mve	1.0%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 8: SR 1 & Pine Street

Date of Count: Thursday, July 16, 2015

Number of Collisions: 7

Number of Injuries: 1

Number of Fatalities: 0

ADT: 13700

Start Date: January 1, 2009

End Date: December 31, 2013

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Stop & Yield Controls

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{7}{13,700} \times \frac{x}{365} \times \frac{1,000,000}{5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.28 c/mve	0.0%	14.3%
Statewide Average*	0.15 c/mve	1.0%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

SEGMENT COLLISION RATE CALCULATIONS

The Avalon

Location: SR 1

Date of Count: Thursday, July 16, 2015

ADT: 8,600

Number of Collisions: 35

Number of Injuries: 14

Number of Fatalities: 0

Start Date: July 1, 2007

End Date: June 30, 2012

Number of Years: 5

Highway Type: Conventional 2 lanes or less

Area: Urban

Design Speed: >45

Segment Length: 1.5 miles

Direction: North/South

Number of Collisions x 1 Million

ADT x 365 Days per Year x Segment Length x Number of Years

$$\frac{35}{8,600} \times \frac{x}{365} \times \frac{1,000,000}{1.5} \times \frac{5}{x}$$

Study Segment	Collision Rate 1.49 c/mvm	Fatality Rate 0.0%	Injury Rate 40.0%
Statewide Average*	1.29 c/mvm	1.0%	41.2%

ADT = average daily traffic volume

c/mvm = collisions per million vehicle miles

* 2010 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

DRAFT

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.2 Worst Case Level of Service: D [26.9]

Street Name: SR 1 (Main St) Pudding Creek Rd

Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Stop Sign Stop Sign Include Include

Rights: Rights: Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 482 87 19 435 1 0 0 0 75 0 11

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 0 482 87 19 435 1 0 0 0 75 0 11

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 0 523 94 21 472 1 0 0 81 0 12

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 523 94 21 472 1 0 0 81 0 12

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxx xxxx xxxx xxxx

FollowupTim:xxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2May95thQ: xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxxx xxxx xxxx xxxx xxxx

LOS By Move: * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondEl:xxxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS: *

ApproachD: D

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.9 Worst Case Level of Service: D [27.4]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Stop Sign Stop Sign Include Include

Rights: Rights: Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 0 503 94 19 458 0 0 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 503 94 19 458 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxx xxxx xxxx xxxx

FollowupTim:xxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxxx xxxx xxxx xxxx xxxx

LOS By Move: * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondEl:xxxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS: *

ApproachD: D

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

Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.9 Worst Case Level of Service: D [27.4]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Stop Sign Stop Sign Include Include

Rights: Rights: Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 0 503 94 19 458 0 0 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 503 94 19 458 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxx xxxx xxxx xxxx

FollowupTim:xxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxxx xxxx xxxx xxxx xxxx

LOS By Move: * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondEl:xxxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS: *

ApproachD: D

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #3 SR 1 (Main St)/Manzanita St

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B [13.3]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 493 Growth Adj: 1.00 1.00 Initial Base: 0 493 User Adj: 1.00 1.00

PHF Adj: 0.93 0.93 PHF Volume: 0 528 Reduct Vol: 0 0

FinalVolume: 0 528 Capacity Module:

Critical Gap Module: Critical Gp:xxxxx xxxxxx FollowupTrm:xxxxx xxxx

FollowupTrm:xxxxx xxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx Move Cap.: xxxx xxxx xxxx

Volume/Cap: 0.04 xxxx xxxx

Level Of Service Module: 2Way95thQ:

Control Del:xxxxx xxxx LOS By Move:

Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx

SharedQueue: 0.1 xxxx xxxx xxxx

Shrd ConDel:xxxxx xxxx Shared LOS:

ApproachDel: xxxx

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

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

Saturday MD Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #3 SR 1 (Main St) // Manzanita St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B [13.4]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 507 Growth Adj: 1.00 1.00 Initial Base: 0 507 User Adj: 1.00 1.00

PHF Adj: 0.90 0.90 PHF Volume: 0 561 Reduct Vol: 0 0

FinalVolume: 0 561 Capacity Module:

Critical Gap Module: Critical Gp:xxxxx xxxx FollowupTrm:xxxxx xxxx

FollowupTrm:xxxxx xxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx Move Cap.: xxxx xxxx xxxx

Volume/Cap: 0.04 xxxx xxxx

Level Of Service Module: 2Way95thQ:

Control Del:xxxxx xxxx LOS By Move:

Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx

SharedQueue: 0.1 xxxx xxxx xxxx

Shrd ConDel:xxxxx xxxx Shared LOS:

ApproachDel: xxxx

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

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

Saturday MD Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #3 SR 1 (Main St) // Manzanita St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B [13.4]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 507 Growth Adj: 1.00 1.00 Initial Base: 0 507 User Adj: 1.00 1.00

PHF Adj: 0.90 0.90 PHF Volume: 0 561 Reduct Vol: 0 0

FinalVolume: 0 561 Capacity Module:

Critical Gap Module: Critical Gp:xxxxx xxxx FollowupTrm:xxxxx xxxx

FollowupTrm:xxxxx xxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx Move Cap.: xxxx xxxx xxxx

Volume/Cap: 0.04 xxxx xxxx

Level Of Service Module: 2Way95thQ:

Control Del:xxxxx xxxx LOS By Move:

Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx

SharedQueue: 0.1 xxxx xxxx xxxx

Shrd ConDel:xxxxx xxxx Shared LOS:

ApproachDel: xxxx

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

ApproachLOS: *

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 SR 1 (Main St)/Elm St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.462

Average Delay (sec/veh): 18.6

Optimal Cycle: 30 Level of Service: B

Street Name: SR 1 (Main St) Elm St Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R

Controls: Protected Permitted Protected Permitted Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Lanes: 1 0 1 0 1 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol:	97	421	16	14	423	44	48	14	111	26	33	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Base:	97	421	16	14	423	44	48	14	111	26	33	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	106	462	18	15	464	48	53	15	122	29	36	37
Reduc. Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	462	18	15	464	48	53	15	122	29	36	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MFL Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	106	462	18	15	464	48	53	15	122	29	36	37

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.95	1.00	0.85	0.82	0.82	0.86	0.86	0.86	0.86
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.28	0.35	0.37	0.37	0.37
Final Sat.:	1805	1900	1615	1805	1900	1615	431	126	997	455	577	595

Capacity Analysis Module:

Vol/Sat: 0.06 0.24 0.01 0.01 0.24 0.03 0.12 0.12 0.12 0.06 0.06 0.06

Crit Moves: ****

Green/Cycle:	0.13	0.63	0.63	0.02	0.53	0.53	0.26	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.46	0.38	0.02	0.38	0.46	0.06	0.46	0.46	0.46	0.24	0.24	0.24
Delay/Veh:	41.9	9.1	6.8	54.2	15.1	11.5	31.7	31.7	31.7	29.2	29.2	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.9	9.1	6.8	54.2	15.1	11.5	31.7	31.7	31.7	29.2	29.2	29.2
LOS by Move:	D	A	D	B	B	C	C	C	C	C	C	C
HCM2k95lhQ:	7	13	0	2	17	1	10	10	10	5	5	5

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

Intersection #4 SR 1 (Main St / Elm St)		Approach: North Bound		South Bound		East Bound		West Bound		Elm St	
Cycle (sec):	100	Critical Vol./Cap. (X):	0.462	Critical Vol./Cap. (X):	0.493	Avg. Loss Time (sec):	8	Avg. Optimal Cycle:	31	Level of Service:	C
Loss Time (sec):	8	Optimal Cycle:	30	Control:	Protected	Protected	Protected	Protected	Control:	Protected	Permitted
Optimal Cycle:	30	Rights:	Y+R:	Min. Green:	0	0	0	0	Y+R:	0	0
Lanes:	1 0 1 0 1 0 1 0 1 0 1 0	Y+R:	Y+R:	Y+R:	0	0	0	0	Y+R:	0	0
Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15	Base Vol:	120	404	19	19	401	83	71	18	153	14
	Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	38
	Initial Base:	120	404	19	19	401	83	71	18	153	41
	User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	41
	PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	41
	PHF Volume:	125	421	20	20	418	87	74	19	160	43
	Reduc. Vol:	0	0	0	0	0	0	0	0	0	0
	Reduced Vol:	125	421	20	20	418	87	74	19	160	43
	PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	43
	MFL Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	43
	FinalVolume:	125	421	20	20	418	87	74	19	160	43

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 SR 1 (Main St)/Spruce St

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: D [31.4]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 16 Jul 2016 << 16:15-17:15

Base Vol: 31 533 7 | 4 566 4 | 3 1 46 | 8 0 2 |

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 1.00

Initial Base: 31 533 7 | 4 566 4 | 3 1 46 | 8 0 2 |

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 1.00

PHF Adj: 0.93 0.93 0.93 | 0.93 0.93 0.93 | 0.93 0.93 | 0.93 0.93 | 0.93

PHF Volume: 33 571 8 | 4 607 4 | 3 1 49 | 9 0 2 |

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0

FinalVolume: 33 571 8 | 4 607 4 | 3 1 49 | 9 0 2 |

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx | 4.1 xxxx xxxx | 7.1 6.5 | 6.2 6.2 |

FollowupTm: 2.2 xxxx xxxx | 2.2 xxxx xxxx | 3.5 4.0 | 3.3 3.3 |

Capacity Module:

Conflict Vol: 611 xxxx xxxx | 579 xxxx xxxx | 1260 1263 | 609 1261 |

Potent Cap.: 978 xxxx xxxx | 1005 xxxx xxxx | 149 171 | 499 143 |

Move Cap.: 978 xxxx xxxx | 1005 xxxx xxxx | 144 165 | 499 125 |

Volume/Cap: 0.03 xxxx xxxx | 0.00 xxxx xxxx | 0.02 0.01 | 0.10 0.00 | 0.00 0.00 |

Level Of Service Module:

2May95thQb: 0.1 xxxx xxxx | 0.0 xxxx xxxx | 1260 1263 | 609 1261 |

Control Del: 8.8 xxxx xxxx | 8.6 xxxx xxxx | * * | * * | * *

LOS By Move: A * | A * | * * | * * | * *

Movement: LT - LTR - RT | LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx | xxxx xxxx xxxx | 420 xxxx | 147 xxxx | 147 xxxx

SharedQueue:xxxx xxxx xxxx | xxxx xxxx xxxx | 0.4 xxxx | 0.2 xxxx | 0.2 xxxx

Shrd ConDel:xxxx xxxx xxxx | xxxx xxxx xxxx | 14.8 xxxx | 31.4 xxxx | 31.4 xxxx

Shared LOS: * * | * * | * B * | * D * | * C *

ApproachDel: xxxx xxxx | xxxx xxxx | 14.8 31.4 | 31.4 B | 16.3 C

ApproachLOS: * * | * * | * * | * * | * *

ApproachQDOS: * * | * * | * * | * * | * *

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

Saturday MD Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 SR 1 (Main St //Spruce St

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C [18.0]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 18 Jul 2015 <<

Base Vol: 37 581 3 | 4 571 8 | 3 4 571 | 1 1 29 | 1 0 0 4

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 1.00

Initial Base: 37 581 3 | 4 571 8 | 3 4 571 | 1 1 29 | 1 0 0 4

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 1.00

PHF Adj: 0.90 0.90 0.90 | 0.90 0.90 0.90 | 0.90 0.90 | 0.90 0.90 | 0.90

PHF Volume: 41 643 3 | 4 632 9 | 3 1 32 | 1 0 4

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0

FinalVolume: 41 643 3 | 4 632 9 | 3 1 32 | 1 0 4

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx | 4.1 xxxx xxxx | 7.1 6.5 | 6.2 6.2 |

FollowupTm: 2.2 xxxx xxxx | 2.2 xxxx xxxx | 3.5 4.0 | 3.3 3.3 |

Capacity Module:

Conflict Vol: 641 xxxx xxxx | 647 xxxx xxxx | 1375 1374 | 637 1389 | 645

Potent Cap.: 953 xxxx xxxx | 948 xxxx xxxx | 124 147 | 481 121 | 476

Move Cap.: 953 xxxx xxxx | 948 xxxx xxxx | 118 140 | 481 108 | 139 | 476

Volume/Cap: 0.04 xxxx xxxx | 0.00 xxxx xxxx | 0.03 0.01 | 0.07 0.01 | 0.00 0.01 |

Level Of Service Module:

2Way95thQb: 0.1 xxxx xxxx | 0.0 xxxx xxxx | 1375 1374 | 637 1389 | 645

Control Del: 8.9 xxxx xxxx | 8.8 xxxx xxxx | * * | * * | * *

LOS By Move: A * | A * | * * | * * | * *

Movement: LT - LTR - RT | LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx | xxxx xxxx xxxx | 356 xxxx | 283 xxxx | 283 xxxx

SharedQueue:xxxx xxxx xxxx | xxxx xxxx xxxx | 0.3 xxxx | 0.3 xxxx | 0.3 xxxx

Shrd ConDel:xxxx xxxx xxxx | xxxx xxxx xxxx | 16.3 xxxx | 18.0 xxxx | 18.0 xxxx

Shared LOS: * * | * * | * C * | * C * | * C *

ApproachDel: xxxx xxxx | xxxx xxxx | 16.3 18.0 | C C | C C

ApproachLOS: * * | * * | * * | * * | * *

ApproachQDOS: * * | * * | * * | * * | * *

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #6 SR 1 (Main St)/Bush St

Worst Case Level Of Service: D [29.9]

Average Delay (sec/veh): 0.8

Worst Case Level Of Service: D [29.9]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1:0 0 |

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 17 568 12 | 14 613 0 | 0 1 0 | 16 11 0 | 5

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

Initial Base: 17 568 12 | 14 613 0 | 0 1 0 | 16 11 0 | 5

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

PHF Adj: 0.94 0.94 0.94 | 0.94 0.94 0.94 | 0.94 0.94 0.94 | 0.94 0.94 0.94 | 0.94 0.94 0.94

PHF Volume: 18 604 13 | 15 651 0 | 1 0 | 17 12 0 | 5

Reduc Vol: 0 0 | 0 0 | 0 0 | 0 0 | 0 0

FinalVolume: 18 604 13 | 15 651 0 | 0 1 0 | 17 12 0 | 5

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx | 7.1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx 2.2 xxxx xxxx | 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 651 xxxx xxxx 616 xxxx xxxx | 1330 1334

Potent Cap.: 945 xxxx xxxx 973 xxxx xxxx | 133 155

Move Cap.: 945 xxxx xxxx 973 xxxx xxxx | 128 150

Volume/Cap: 0.02 xxxx xxxx 0.02 xxxx xxxx | 0.01 0.00

0.04 0.00 0.01

Level Of Service Module:

2May95thQ: 0.1 xxxx xxxx 0.0 xxxx xxxx | xxxx xxxx

Control Del: 8.9 xxxx xxxx 8.8 xxxx xxxx | * *

LOS by Move: A * * A *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx | 408 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx | 0.1 xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx | 14.2 xxxx

Shared LOS: * * * * B * * D *

ApproachDel: xxxx xxxx * * * * C *

ApproachLOS: * * * * * C *

ApproachD: B D

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

Saturday MD Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #6 SR 1 (Main St) / Bush St

Worst Case Level Of Service: C [19.8]

Average Delay (sec/veh): 0.5

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1:0 0 |

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 10 613 10 | 4 592 2 | 4 0 | 10 2 0 | 11

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

Initial Base: 10 613 10 | 4 592 2 | 4 0 | 10 2 0 | 11

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

PHF Adj: 0.91 0.91 0.91 | 0.91 0.91 0.91 | 0.91 0.91 0.91 | 0.91 0.91 0.91

PHF Volume: 11 672 11 | 4 649 2 | 4 0 | 11 2 0 | 12

Reduc Vol: 0 0 | 0 0 | 0 0 | 0 0 | 0 0

FinalVolume: 11 672 11 | 4 649 2 | 4 0 | 11 2 0 | 12

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx | 7.1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx | 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 651 xxxx xxxx 683 xxxx xxxx | 1364 1364

Potent Cap.: 945 xxxx xxxx 919 xxxx xxxx | 126 149

Move Cap.: 945 xxxx xxxx 919 xxxx xxxx | 121 146

Volume/Cap: 0.01 xxxx xxxx 0.00 xxxx xxxx | 0.04 0.00

0.02 0.00 0.03

Level Of Service Module:

2Way95thQ: 0.0 xxxx xxxx 0.0 xxxx xxxx | xxxx xxxx

Control Del: 8.9 xxxx xxxx 8.9 xxxx xxxx | * *

LOS by Move: A * * A *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx | 162 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx | 0.3 xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx | 29.9 xxxx

Shared LOS: * * * * B * * D *

ApproachDel: xxxx xxxx * * * * C *

ApproachLOS: * * * * * C *

ApproachD: B D

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: D [29.7]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 13 579 10 17 618 5 2 3 17 12 4 12

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 13 579 10 17 618 5 2 3 17 12 4 12

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 14 627 11 18 670 5 2 3 18 13 4 13

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 14 627 11 18 670 5 2 3 18 13 4 13

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 7.1 6.5 6.2 7.1 6.5

FollowupTm: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 675 xxxx xxxx 638 xxxx xxxx 1379 1375

Potent Cap.: 926 xxxx xxxx 955 xxxx xxxx 1.23 147

Move Cap.: 926 xxxx xxxx 955 xxxx xxxx 114 142

Volume/Cap: 0.02 xxxx xxxx 0.02 0.02 0.04

2May95thQb:

Control Del: 8.9 xxxx xxxx 8.8 xxxx xxxx

LOS by Move: A *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue: xxxx xxxx xxxx xxxx xxxx xxxx

Shrd ConDel: xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

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

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [19.2]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 13 596 0 0 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 20 613 14 13 596 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 22 666 15 14 648 0 0 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 22 666 15 14 648 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx

FollowupTm: 2.2 xxxx xxxx 2.2 xxxx xxxx

Capacity Module:

Conflict Vol: 648 xxxx xxxx

Potent Cap.: 948 xxxx xxxx

Move Cap.: 948 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx

2Way95thQb:

Control Del: 8.9 xxxx xxxx

LOS by Move: A *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx

SharedQueue: xxxx xxxx xxxx xxxx xxxx

Shrd ConDel: xxxx xxxx xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

PM Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: D [34.2]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 21 567 24 54 605 4 | 2 1 26 8 41

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 21 567 24 54 605 4 | 2 1 26 8 41

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94

PHF Volume: 22 606 26 58 647 4 | 2 1 28 21 9 44

Reduc Vol: 0 0 0 0 0 0 0 0

FinalVolume: 22 606 26 58 647 4 | 2 1 28 21 9 44

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.2

FollowupTm: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 651 xxxx xxxx 632 xxxx xxxx 1455 1442 649

Potent Cap.: 945 xxxx xxxx 960 xxxx xxxx 109 134 473

Move Cap.: 945 xxxx xxxx 960 xxxx xxxx 88 123 473

Volume/Cap: 0.02 xxxx 0.06 xxxx 0.02 0.01 0.06 0.22 0.07 0.09

Level Of Service Module:

2May95thQb: 0.1 xxxx xxxx 0.2 xxxx xxxx 1443 1431 619

Control Del: 8.9 xxxx xxxx 9.0 xxxx xxxx * *

LOS by Move: A * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx 338 xxxx 195 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx 0.3 xxxx xxxx 16.7 xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx 34.2 xxxx

Shared LOS: * * * *

ApproachDel: xxxx xxxx * *

ApproachLOS: * *

ApproachD: C D

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

Saturday MD Peak Hour - Existing Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: D [31.8]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 15 597 23 44 551 12 6 4 | 36 20 6

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 15 597 23 44 551 12 6 4 | 36 20 6

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93

PHF Volume: 16 645 25 48 595 13 6 4 | 39 22 6

Reduc Vol: 0 0 0 0 0 0 0 0

FinalVolume: 16 645 25 48 595 13 6 4 | 39 22 6

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.5

FollowupTm: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 608 xxxx xxxx 670 xxxx xxxx 1414 1398 602

Potent Cap.: 980 xxxx xxxx 930 xxxx xxxx 116 142 504

Move Cap.: 980 xxxx xxxx 930 xxxx xxxx 132 132 504

Volume/Cap: 0.02 xxxx 0.05 xxxx 0.07 0.03 0.08

Level Of Service Module:

2Way95thQb: 0.1 xxxx xxxx 0.2 xxxx xxxx 9.1 xxxx xxxx 1408 1393 657

Control Del: 8.7 xxxx xxxx * *

LOS by Move: A * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx 279 xxxx 0.6 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx 0.3 xxxx xxxx 20.7 xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx 31.8 xxxx

Shared LOS: * * * *

ApproachDel: xxxx xxxx * *

ApproachLOS: * *

ApproachD: C D

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

PM Existing plus Project Wed Aug 12, 2015 15:30:37

Page 2-1

Saturday MD Existing plus PWed Aug 12, 2015 15:29:51

Page 2-1

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Trip Generation Report

Forecast for pm

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total
1	The Avalon	1.00 Hotel		20.00	20.00	20	20	40 100.0
	Zone 1 Subtotal					20	20	40 100.0
	TOTAL					20	20	40 100.0

TOTAL

Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Trip Generation Report

Forecast for md

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total
1	The Avalon	1.00 Hotel		27.00	21.00	27	21	48 100.0
	Zone 1 Subtotal					27	21	48 100.0
	TOTAL					27	21	48 100.0

Saturday MD Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #1 SR 1 (Main St)/Airport Rd

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C [18.1]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 404 51

Growth Adj: 1.00 1.00 1.00

Initial Base: 0 404 51

Added Vol: 0 16 0

PasserbyVol: 0 0 0

Initial Fut: 0 420 51

User Adj: 1.00 1.00 1.00

PHF Adj: 0.94 0.94 0.94

PHF Volume: 0 445 54

Reduc Vol: 0 0 0

FinalVolume: 0 445 54

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd confl:xxxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #1 SR 1 (Main St // Airport Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [17.0]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 412 22

Growth Adj: 1.00 1.00 1.00

Initial Base: 0 412 22

Added Vol: 0 22 0

PasserbyVol: 0 0 0

Initial Fut: 0 434 22

User Adj: 1.00 1.00 1.00

PHF Adj: 0.94 0.94 0.94

PHF Volume: 0 461 23

Reduc Vol: 0 0 0

FinalVolume: 0 461 23

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: 0.00 xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd confl:xxxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.3 Worst Case Level of Service: D[28.5]

Street Name: SR 1 (Main St) Pudding Creek Rd

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign

Rights: Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 482 87 19 435 1 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 0 482 87 19 435 1 0 0 0 0 0 0 0 0 0 0

Added Vol: 0 16 0 0 16 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 498 87 19 451 1 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 0 540 94 21 489 1 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 540 94 21 489 1 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTIme:xxxxxx xxxx xxxx xxxx xxxx xxxx

3.5 4.0 3.3

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

0.1 xxxx xxxx xxxx xxxx xxxx xxxx xxxx

0.2 xxxx xxxx xxxx xxxx xxxx xxxx xxxx

0.36 0.00 0.02

Level of Service Module:

2Way95thQ: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxxx xxxx xxxx xxxx xxxx xxxx

8.8 xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Los by Move: * * * * *

A * * * *

LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shrd Conflct:xxxxx xxxx xxxx xxxx xxxx xxxx

xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel: xxxxxxxx

ApproachLOS: * * * * *

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

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Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #2 SR 1 (Main St)//Pudding Creek Rd

Average Delay (sec/veh): 3.0 Worst Case Level of Service: D[29.6]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign

Rights: Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 499 89 18 451 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 0 526 94 19 476 0 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 526 94 19 476 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTIme:xxxxxx xxxx xxxx xxxx xxxx

3.5 4.0 3.3

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx

0.1 xxxx xxxx xxxx xxxx xxxx xxxx

0.2 xxxx xxxx xxxx xxxx xxxx xxxx

0.36 0.00 0.04

Level of Service Module:

2Way95thQ: xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxxx xxxx xxxx xxxx xxxx

8.8 xxxx xxxx xxxx xxxx xxxx xxxx

Los by Move: * * * * *

A * * * *

LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

xxxx xxxx xxxx xxxx xxxx xxxx

Shrd Conflct:xxxxx xxxx xxxx xxxx xxxx

xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel: xxxxxxxx

ApproachLOS: * * * * *

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

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Wed Aug 12, 2015 15:30:38
 PM Peak Hour - Existing plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #3 SR 1 (Main St)/Manzanita St

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B [13.5]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 493

Growth Adj: 1.00 1.00

Initial Base: 0 493

Added Vol: 0 16

PasserbyVol: 0 0

Initial Fut: 0 509

User Adj: 1.00 1.00

PHF Adj: 0.93 0.93

PHF Volume: 0 546

Reduc Vol: 0 0

FinalVolume: 0 546

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx xxxx

Shrd confl:xxxxx xxxx xxxx

Shared LOS: * *

ApproachDel:

ApproachLOS:

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

Saturday MD Existing plus PWed Aug 12, 2015 15:29:53

Page 5-1

Saturday MD Peak Hour - Existing plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #3 SR 1 (Main St) / Manzanita St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B [13.8]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 507

Growth Adj: 1.00 1.00

Initial Base: 0 507

Added Vol: 0 22

PasserByVol: 0 0

Initial Fut: 0 529

User Adj: 1.00 1.00

PHF Adj: 0.90 0.90

PHF Volume: 0 585

Reduc Vol: 0 0

FinalVolume: 0 585

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx xxxx

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx xxxx

Shrd confl:xxxxx xxxx xxxx

Shared LOS: * *

ApproachDel:

ApproachLOS:

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

PM Existing plus Project Wed Aug 12, 2015 15:30:38 Page 6-1
 PM Peak Hour - Existing plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)
 Intersection #4 SR 1 (Main St) / Elm St
 Critical Vol./Cap. (X): 0.472
 Cycle (sec): 100
 Loss Time (sec): 8
 Optimal Cycle: 30
 Level of Service: B

Street Name:	SR 1 (Main St)			Elm St		
Approach:	North Bound		South Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Included	Included	Permitted	Permitted
Rights:	Min. Green: 0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol:	97	421	16	14	423	44	48	14	111	26	33	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Base:	97	421	16	14	423	44	48	14	111	26	33	34
Added Vol:	0	16	0	0	16	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	437	16	14	439	44	48	14	111	26	33	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	106	479	18	15	481	48	53	15	122	29	36	37
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	479	18	15	481	48	53	15	122	29	36	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	479	18	15	481	48	53	15	122	29	36	37

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.95	1.00	0.85	0.82	0.82	0.82	0.86	0.86	0.86	0.86
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	1900	1615	1805	1900	1615	431	126	997	456	578	596
Capacity Analysis Module:	0.06	0.25	0.01	0.01	0.25	0.03	0.12	0.12	0.06	0.06	0.06	0.06
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green/Cycle:	0.12	0.64	0.64	0.02	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.47	0.39	0.02	0.39	0.47	0.06	0.47	0.47	0.47	0.47	0.47	0.47
Delay/Veh:	42.3	8.9	6.6	54.7	14.7	11.1	32.2	32.2	29.6	29.6	29.6	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	8.9	6.6	54.7	14.7	11.1	32.2	32.2	29.6	29.6	29.6	29.6
LOS by Move:	D	A	A	D	B	B	C	C	C	C	C	C
HCM2k95thQ:	7	13	0	2	17	1	10	10	5	5	5	5

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)
 Intersection #4 SR 1 (Main St) / Elm St
 Critical Vol./Cap. (X): 0.503
 Cycle (sec): 100
 Loss Time (sec): 8
 Optimal Cycle: 32
 Level of Service: C

Street Name:	SR 1 (Main St)			Elm St		
Approach:	North Bound		South Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Included	Included	Protected	Protected
Rights:	Min. Green: 0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol:	120	404	19	19	401	83	71	18	153	14	38	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Base:	120	404	19	19	401	83	71	18	153	14	38	41
Added Vol:	0	22	0	0	17	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	426	19	19	418	83	71	18	153	14	38	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	125	444	20	20	436	87	74	19	160	15	40	43
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	444	20	20	436	87	74	19	160	15	40	43
Reduced Vol:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	444	20	20	436	87	74	19	160	15	40	43

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.95	1.00	0.85	0.85	0.95	1.00	0.85	0.85	0.85	0.85
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	1900	1615	1805	1900	1615	1805	1900	1615	1805	1900	1615
Capacity Analysis Module:	0.07	0.23	0.01	0.01	0.23	0.05	0.16	0.16	0.16	0.16	0.16	0.06
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green/Cycle:	0.14	0.57	0.57	0.03	0.46	0.46	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.50	0.41	0.02	0.41	0.50	0.12	0.50	0.50	0.50	0.50	0.50	0.50
Delay/Veh:	41.6	12.5	9.5	53.6	19.7	15.7	28.0	28.0	28.0	28.0	28.0	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.6	12.5	9.5	53.6	19.7	15.7	28.0	28.0	28.0	28.0	28.0	28.0
LOS by Move:	D	B	A	D	B	C	C	C	C	C	C	C
HCM2k95thQ:	8	14	1	2	18	3	13	13	13	13	4	4

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Saturday MD Existing plus PWED Aug 12, 2015 15:29:53 Page 6-1
 Saturday MD Peak Hour - Existing plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #5 SR 1 (Main St)/Spruce St

Average Delay (sec/veh): 1.1 Worst Case Level of Service: D [33.0]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2016 << 16:15-17:15

Base Vol: 31 533 7

Growth Adj: 1.00 1.00 1.00

Initial Base: 31 533 7

Added Vol: 0 16 0

PasserbyVol: 0 0 0

Initial Fut: 31 549 7

User Adj: 1.00 1.00 1.00

PHF Adj: 0.93 0.93 0.93

PHF Volume:

Reduc Vol: 0 0 0

FinalVolume: 33 588 8

Critical Gap Module:

Critical Gp:

FollowUpTm:

Capacity Module:

Conflict Vol:

Potent Cap.:

Move Cap.:

Volume/Cap:

Level of Service Module:

2Way95thQ:

Control Del:

Los by Move:

Movement:

Shared Cap.:

SharedQueue:

Shrd conflcl:

Shared LOS:

ApproachDel:

ApproachLOS:

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

Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #5 SR 1 (Main St //Spruce St

Average Delay (sec/veh): 0.8 Worst Case Level of Service: C [18.7]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 <<

Base Vol: 37 581 3

Growth Adj: 1.00 1.00 1.00

Initial Base: 37 581 3

Added Vol: 0 22 0

PasserByVol: 0 0 0

Initial Fut: 37 603 3

User Adj: 1.00 1.00 1.00

PHF Adj:

PHF Volume:

Reduc Vol:

FinalVolume:

Critical Gap Module:

Critical Gp:

FollowUpTm:

Capacity Module:

Conflict Vol:

Potent Cap.:

Move Cap.:

Volume/Cap:

Level of Service Module:

2Way95thQ:

Control Del:

Los by Move:

Movement:

Shared Cap.:

SharedQueue:

Shrd conflcl:

Shared LOS:

ApproachDel:

ApproachLOS:

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

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #6 SR 1 (Main St)/Bush St

Average Delay (sec/veh):		0.8	Worst Case Level Of Service: D [31.3]		
Street Name:	SR 1 (Main St)		Bush St	East Bound	
Approach:	North Bound	South Bound	L - T - R	L - T - R	
Movement:	L - T - R	Uncontrolled			
Control:	Uncontrolled		Stop Sign		
Rights:	Include	Include	Include	Include	
Lanes:	1 0 0 1 0	1 0 0 1 0	0 0 1 0 0	0 0 1 0 0	
Volume Module: >> Count Date:	16 Jul 2015 << 16:15-17:15				
Base Vol:	17 568	12	14 613	0	1 0 16 11 0 5
Growth Adj:	1.00	1.00	1.00	1.00	1.00 1.00 1.00 1.00
Initial Base:	17 568	12	14 613	0	1 0 16 11 0 5
Added Vol:	0 16	0	0 16	0	0 0 0 0 0 0
PasserbyVol:	0 0	0	0 0	0	0 0 0 0 0 0
Initial Fut:	17 584	12	14 629	0	1 0 16 11 0 5
User Adj:	1.00	1.00	1.00	1.00	1.00 1.00 1.00 1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94 0.94 0.94 0.94
PHF Volume:	18 621	13	15 668	0	1 0 17 12 0 5
Reducet Vol:	0 0	0	0 0	0	0 0 0 0 0 0
FinalVolume:	18 621	13	15 668	0	1 0 17 12 0 5

Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx
FollowupTm: 2.2 xxxx xxxx
FinalVol: 15 668
Volume/Cap: 0.02 xxxx xxxx

Capacity Module:
Conflict Vol: 668 xxxx xxxx
Potent Cap.: 931 xxxx xxxx
Move Cap.: 931 xxxx xxxx
Volume/Cap: 0.02 xxxx xxxx

Level of Service Module:
2Way95thQ: 0.1 xxxx xxxx
Control Del: 8.9 xxxx xxxx
Los by Move: A * * *
Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx
SharedQueue: xxxx xxxx xxxx
Shrd. condEl: xxxx xxxx xxxx
Shared LOS: * * *
ApproachDel:
ApproachLOS:

Level of Service Module:
2Way95thQ: 0.0 xxxx xxxx
Conflict Vol: 670 xxxx xxxx
Potent Cap.: 930 xxxx xxxx
Move Cap.: 930 xxxx xxxx
Volume/Cap: 0.01 xxxx xxxx

Capacity Module:
Cnflct Vol: 707 xxxx xxxx
Potent Cap.: 901 xxxx xxxx
Move Cap.: 901 xxxx xxxx
Volume/Cap: 0.00 xxxx xxxx

Control Del: 8.9 xxxx xxxx
Los by Move: A * * *
Movement: LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx
SharedQueue: xxxx xxxx xxxx
Shrd. condEl: xxxx xxxx xxxx
Shared LOS: * * *
ApproachDel:
ApproachLOS:

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

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Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #6 SR 1 (Main St) / Bush St

Average Delay (sec/veh):		0.5	Worst Case Level Of Service: C [20.7]		
Street Name:	SR 1 (Main St)	Bush St	South Bound	East Bound	
Approach:	North Bound	South Bound	L - T - R	L - T - R	
Movement:	L - T - R	Uncontrolled		Uncontrolled	
Control:	Uncontrolled		Stop Sign	Stop Sign	
Rights:	Include	Include	Include	Include	
Lanes:	1 0 0 1 0	1 0 0 1 0	0 0 1 0 0	0 0 1 0 0	
Volume Module: >> Count Date:	18 Jul 2015 << 13:00-14:00				
Base Vol:	10 613	10	4 592	2 4	0 10 2 0 11
Growth Adj:	1.00	1.00	1.00	1.00	1.00 1.00 1.00 1.00
Initial Base:	10 613	10	4 592	2 4	0 10 2 0 11
Added Vol:	0 22	0	0 17	0 0	0 0 0 0 0
PasserbyVol:	0 0	0	0 0	0 0	0 0 0 0 0
Initial Fut:	10 635	10	4 609	2 4	0 10 2 0 11
User Adj:	1.00	1.00	1.00	1.00	1.00 1.00 1.00 1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91 0.91 0.91 0.91
PHF Volume:	11 696	11	4 668	2 4	0 11 2 0 12
Reducet Vol:	0 0	0	0 0	0 0	0 0 0 0 0
FinalVolume:	11 696	11	4 668	2 4	0 11 2 0 12

Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx
FollowupTm: 2.2 xxxx xxxx
FinalVol: 11 696
Volume/Cap: 0.02 xxxx xxxx

Capacity Module:
Conflict Vol: 707 xxxx xxxx
Potent Cap.: 901 xxxx xxxx
Move Cap.: 901 xxxx xxxx
Volume/Cap: 0.00 xxxx xxxx

Level of Service Module:
2Way95thQ: 0.0 xxxx xxxx
Control Del: 8.9 xxxx xxxx
Los by Move: A * * *
Movement: LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx
SharedQueue: xxxx xxxx xxxx
Shrd. condEl: xxxx xxxx xxxx
Shared LOS: * * *
ApproachDel:
ApproachLOS:

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

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PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: D [31.3]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R | L - T - R | L - T - R | L - T - R |Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 0 1: 0 0 |

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 13 579 10 | 17 618 5 | 2 3 17 | 12 4 12

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

Initial Base: 13 579 10 | 17 618 5 | 2 3 17 | 12 4 12

Added Vol: 0 16 0 | 0 16 0 | 0 0 0 | 0 0 0

PasserbyVol: 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0

Initial Fut: 13 595 10 | 17 634 5 | 2 3 17 | 12 4 12

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 | 0.92 0.92 0.92 | 0.92 0.92 0.92

PHF Volume: 14 645 11 | 18 687 5 | 2 3 18 | 13 4 13

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 | 0 0 0

FinalVolume: 14 645 11 | 18 687 5 | 2 3 18 | 13 4 13

Capacity Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7.1 6.5 6.2

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Volume/Cap: 0.02 xxxx xxxx 0.02 0.02 0.04

Capacity Module:

Conflict Vol: 692 xxxx xxxx 655 xxxx xxxx

Potent Cap.: 912 xxxx xxxx 941 xxxx xxxx

Move Cap.: 912 xxxx xxxx 941 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.02 0.02 0.04

Level Of Service Module:

2Way95thQ: 0.0 xxxx xxxx 0.1 xxxx xxxx xxxx

Control Del: 9.0 xxxx xxxx 8.9 xxxx xxxx

Los by Move: A * * * * * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:

ApproachLOS:

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

Saturday MD Existing plus PWed Aug 12, 2015 15:29:53

Page 9-1

Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [20.0]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R | L - T - R | L - T - R | L - T - R |Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 0 1: 0 0 |

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 | 13 596 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

Growth Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

Initial Base: 20 613 14 | 13 596 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

Added Vol: 0 22 0 | 0 17 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

PasserByVol: 0 0 0 | 0 0 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

Initial Fut: 20 635 14 | 13 613 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 | 0.92 0.92 0.92 | 0.92 0.92 0.92

PHF Volume: 22 690 15 | 14 666 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

FinalVolume: 22 690 15 | 14 666 0 | 0 0 0 0 0 0 | 0 0 0 0 0 0

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 6.2

FollowUpTm: 2.2 xxxx xxxx xxxx 3.3 3.5 4.0 3.3

Volume/Cap: 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00

Capacity Module:

Cnflct Vol: 666 xxxx xxxx 705 xxxx xxxx

Potent Cap.: 933 xxxx xxxx 902 xxxx xxxx

Move Cap.: 933 xxxx xxxx 902 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.02 xxxx xxxx

Capacity Module:

2Way95thQ: 0.1 xxxx xxxx 0.0 xxxx xxxx

Control Del: 9.0 xxxx xxxx 9.1 xxxx xxxx

Los by Move: A * * * * * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:

ApproachLOS:

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

PM Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 2.6 Worst Case Level of Service: E [36.5]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 21 567 24 54 605 4 2 1 26 20 8 41

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 21 567 24 54 605 4 2 1 26 20 8 41

Added Vol: 0 16 0 0 16 0 0 0 0 0 0 0

PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 21 583 24 54 621 4 2 1 26 20 8 41

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94

PHF Volume: 22 624 26 58 664 4 2 1 28 21 9 44

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 22 624 26 58 664 4 2 1 28 21 9 44

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7.1 6.5 6.2

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 668 xxxx xxxx 649 xxxx xxxx

Potent Cap.: 931 xxxx xxxx 946 xxxx xxxx

Move Cap.: 931 xxxx xxxx 946 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.06 xxxx xxxx

Level of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.2 xxxx xxxx

Control Del: 9.0 xxxx xxxx 9.1 xxxx xxxx

Los by Move: A * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS:

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

Saturday MD Peak Hour - Existing plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 2.9 Worst Case Level of Service: D [34.4]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 15 597 23 44 551 12 6 4 36 20 6 46

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Base: 15 597 23 44 551 12 6 4 36 20 6 46

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0

PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 15 619 23 44 568 12 6 4 36 20 6 46

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93

PHF Volume: 16 668 25 48 613 13 6 4 39 22 6 50

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 16 668 25 48 613 13 6 4 39 22 6 50

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7.1 6.5 6.2

FollowUpTm: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflct Vol: 626 xxxx xxxx

Potent Cap.: 965 xxxx xxxx

Move Cap.: 965 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.05 xxxx xxxx

Level of Service Module:

2Way95thQ: 0.1 xxxx xxxx

Control Del: 8.8 xxxx xxxx

Los by Move: A * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx

Shrd ConDel:xxxx xxxx xxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS:

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PM Peak Hour – Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.6 Worst Case Level of Service: D [31.1]

Street Name: SR 1 (Main St) Pudding Creek Rd

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 482 87 19 435 1 0 0 1 0 11

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 0 554 100 22 500 1 0 0 0 86 0 13

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 554 100 22 500 1 0 0 0 86 0 13

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 554 100 22 500 1 0 0 0 86 0 13

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

FollowupTim:xxxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Del:xxxxx xxxx xxxx xxxx xxxx xxxx

Move Del:xxxxx xxxx xxxx xxxx xxxx xxxx

LOS By Move: * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondDel:xxxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:xxxxxx xxxx xxxx

ApproachLOS: * * * * *

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

Saturday MD Peak Hour – Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 3.6 Worst Case Level of Service: E [35.2]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol: 0 477 89 18 434 0 0 0 0 93 0 19

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 0 549 102 21 499 0 0 0 0 107 0 22

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 549 102 21 499 0 0 0 0 107 0 22

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 549 102 21 499 0 0 0 0 107 0 22

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxx xxxx xxxx xxxx

FollowupTim:xxxxx xxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Capacity Module:

Conflict Del:xxxxx xxxx xxxx xxxx xxxx

Move Del:xxxxx xxxx xxxx xxxx xxxx

LOS By Move: * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxxx xxxx xxxx xxxx xxxx

Shrd CondDel:xxxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:xxxxxx xxxx xxxx

ApproachLOS: * * * * *

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

PM Peak Hour - Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #3 SR 1 (Main St)/Manzanita St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B [14.0]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R Control: Uncontrolled Rights: Lanes:

South Bound Movement: L - T - R Control: Uncontrolled Rights: Lanes:

East Bound Movement: L - T - R Control: Stop Sign Rights: Lanes:

West Bound Movement: L - T - R Control: Stop Sign Rights: Lanes:

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 493 Growth Adj: 1.15 1.15 1.15 Initial Base: 0 567 User Adj: 1.00 1.00 1.00 PHF Adj: 1.00 1.00 1.00 PHF Volume: 0 567 Reduct Vol: 0 0 FinalVolume: 0 567

Critical Gap Module: Critical Gp:xxxxx FollowUpTim:xxxxx

Critical Gap Module: Critical Gp:xxxxx FollowUpTim:xxxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx Potent Cap.: xxxx xxxx Move Cap.: xxxx xxxx Volume/Cap: 0.04 xxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx Potent Cap.: xxxx xxxx Move Cap.: xxxx xxxx Volume/Cap: 0.02 0.00

Capacity Module: 2Way95thQ: xxxx xxxx xxxx Control Del:xxxxx LOS By Move: *

Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx Shared Queue: 0.1 xxxx xxxx xxxx Shrd ConDels:xxxxx Shared LOS: *

ApproachDel: xxxx ApproachLOS: *

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

Saturday MD Peak Hour - Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #3 SR 1 (Main St) // Manzanita St

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B [13.8]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R Control: Uncontrolled Rights: Lanes:

South Bound Movement: L - T - R Control: Uncontrolled Rights: Lanes:

East Bound Movement: L - T - R Control: Stop Sign Rights: Lanes:

West Bound Movement: L - T - R Control: Stop Sign Rights: Lanes:

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 507 Growth Adj: 1.15 1.15 1.15 Initial Base: 0 583 User Adj: 1.00 1.00 1.00 PHF Adj: 1.00 1.00 1.00 PHF Volume: 0 583 Reduct Vol: 0 0 FinalVolume: 0 583

Critical Gap Module: Critical Gp:xxxxx FollowUpTim:xxxxx

Critical Gap Module: Critical Gp:xxxxx FollowUpTim:xxxxx

Capacity Module: Cnflct Vol: xxxx xxxx xxxx Potent Cap.: xxxx xxxx Move Cap.: xxxx xxxx Volume/Cap: 0.04 xxxx

Capacity Module: 2Way95thQ: xxxx xxxx xxxx Control Del:xxxxx LOS By Move: *

Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx Shared Queue: 0.1 xxxx xxxx xxxx Shrd ConDels:xxxxx Shared LOS: *

ApproachDel: xxxx ApproachLOS: *

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

PM Peak Hour – Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #6 SR 1 (Main St)/Bush St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: E [35.6]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1: 0 0 |

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 17 568 12 | 14 613 0 | 1 0 16 11 0 5 |

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 |

Initial Base: 20 653 14 | 16 705 0 | 1 0 18 13 0 6 |

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 |

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 |

PHF Volume: 20 653 14 | 16 705 0 | 1 0 18 13 0 6 |

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 0 0 0 |

FinalVolume: 20 653 14 | 16 705 0 | 1 0 18 13 0 6 |

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.2

FollowupTm: 2.2 xxxx xxxx 3.5 4.0 3.3 |

Capacity Module:

Conflict Vol: 705 xxxx xxxx 667 xxxx xxxx 1439 1443 |

Potent Cap.: 902 xxxx xxxx 932 xxxx xxxx 112 133 |

Move Cap.: 902 xxxx xxxx 932 xxxx xxxx 107 128 |

Volume/Cap: 0.02 xxxx xxxx 0.02 xxxx xxxx 0.01 0.00 |

Level Of Service Module:

2May95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx 705 1446 1436 |

Control Del: 9.1 xxxx xxxx 8.9 xxxx xxxx * * *

LOS by Move: A * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx 372 xxxx 136 xxxx |

SharedQueue: xxxx xxxx xxxx xxxx xxxx 0.2 xxxx 0.5 xxxx |

Shrd CondEl: xxxx xxxx xxxx xxxx xxxx 15.2 xxxx 35.6 xxxx |

Shared LOS: * * * * C * * * * E * |

ApproachDel: xxxx xxxx * * * * C * * * * C |

ApproachLOS: * * * * C * * * * C |

ApproachQDOS: * * * * C * * * * C |

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

Saturday MD Future – Future Conditions

Traffic Impact Study for The Avalon

City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #6 SR 1 (Main St) / Bush St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [21.3]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1: 0 0 |

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 10 613 10 | 4 592 2 4 | 0 10 2 0 | 11 0 1 11 |

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 |

Initial Base: 12 705 12 | 12 5 681 2 | 5 0 12 2 0 | 13 0 1 13 |

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 |

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 |

PHF Volume: 12 705 12 | 12 5 681 2 | 5 0 12 2 0 | 13 0 1 13 |

Reduc Vol: 0 0 0 | 0 0 0 | 0 0 0 0 0 | 0 0 0 0 0 |

FinalVolume: 12 705 12 | 12 5 681 2 | 5 0 12 2 0 | 13 0 1 13 |

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.5

FollowupTm: 2.2 xxxx xxxx 3.5 4.0 3.3 |

Capacity Module:

Conflict Vol: 683 xxxx xxxx 716 xxxx xxxx 1431 1431 |

Potent Cap.: 919 xxxx xxxx 894 xxxx xxxx 113 136 |

Move Cap.: 919 xxxx xxxx 894 xxxx xxxx 108 133 |

Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx 0.04 0.00 |

Level Of Service Module:

2Way95thQ: 0.0 xxxx xxxx 0.0 xxxx xxxx 0.0 xxxx xxxx |

Control Del: 9.0 xxxx xxxx 9.0 xxxx xxxx * * * * *

LOS by Move: A * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx 338 xxxx 238 xxxx |

SharedQueue: xxxx xxxx xxxx xxxx xxxx 0.2 xxxx 0.2 xxxx |

Shrd CondEl: xxxx xxxx xxxx xxxx xxxx 21.3 xxxx xxxx 21.3 xxxx |

Shared LOS: * * * * C * * * * C |

ApproachDel: xxxx xxxx * * * * C * * * * C |

ApproachLOS: * * * * C * * * * C |

ApproachQDOS: * * * * C * * * * C |

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

Saturday MD Future – Future Conditions

Traffic Impact Study for The Avalon

City of Fort Bragg

PM Peak Hour - Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 1.3

Worst Case Level Of Service: D [34.3]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 13 579

Growth Adj: 1.15 1.15

Initial Base: 15 666

User Adj: 1.00 1.00

PHF Adj: 1.00 1.00

PHF Volume: 15 666

Reduc Vol: 0 0

FinalVolume: 15 666

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx

FollowupTm: 2.2 xxxx xxxx

Capacity Module:

Conflict Vol: 716 xxxx xxxx

Potent Cap.: 894 xxxx xxxx

Move Cap.: 894 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx

Level Of Service Module:

2May95thQb:

Control Del: 9.1 xxxx xxxx

LOS by Move: A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue: xxxx xxxx xxxx

Shrd ConDel: xxxx xxxx xxxx

Shared LOS:

ApproachDel:

ApproachLOS:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

Approach:

Peak Hour - Future Conditions

Traffic Impact Study for The Avalon

City of Fort Bragg

Saturday MD Peak Hour - Future Conditions

Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7

Worst Case Level Of Service: C [20.9]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613

Growth Adj: 1.15 1.15

Initial Base: 23 705

User Adj: 1.00 1.00

PHF Adj: 1.00 1.00

PHF Volume: 23 705

Reduc Vol: 0 0

FinalVolume: 23 705

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx

FollowupTm: 2.2 xxxx xxxx

Capacity Module:

Conflict Vol: 685 xxxx xxxx

Potent Cap.: 918 xxxx xxxx

Move Cap.: 918 xxxx xxxx

Volume/Cap: 0.03 xxxx xxxx

Level Of Service Module:

2Way95thQb:

Control Del: 9.1 xxxx xxxx

LOS by Move: A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue: xxxx xxxx xxxx

Shrd ConDel: xxxx xxxx xxxx

Shared LOS:

ApproachDel:

ApproachLOS:

ApproachD:

ApproachC:

ApproachB:

ApproachA:

Approach:

Traffic Impact Study for The Avalon

City of Fort Bragg

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

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

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

PM Peak Hour - Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: E [44.7]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Pine St Approach: South Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 21 567 24 54 605 4 2 1 26 20 8 41

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 24 652 28 62 696 5 2 1 30 23 9 47

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 24 652 28 62 696 5 2 1 30 23 9 47

Reduc Vol: 0 0 0 0 0 0 0 0 0 0

FinalVolume: 24 652 28 62 696 5 2 1 30 23 9 47

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflct Vol: 700 xxxx xxxx 680 xxxx xxxx 1565 1550 698 1552 1539 666

Potent Cap.: 906 xxxx xxxx 922 xxxx xxxx 91 115 444 93 117 463

Move Cap.: 906 xxxx xxxx 922 xxxx xxxx 71 104 444 80 106 463

Volume/Cap: 0.03 xxxx xxxx 0.07 xxxx xxxx 0.03 0.01 0.07 0.29 0.09 0.10

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.2 xxxx xxxx 9.2 xxxx xxxx 9.1 xxxx xxxx

Control Del: A * * * * * * * * * * * *

LOS by Move: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Movement: Shared Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared Queue: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondEl: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * * * * * * * * *

ApproachDel: xxxx xxxx * * * * * * * * * * * *

ApproachLOS: * * * * * * * * * * * *

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

PM Peak Hour - Future Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Base Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: E [39.5]

Street Name: SR 1 (Main St)

Approach: North Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Pine St Approach: South Bound Movement: L - T - R | L - T - R | L - T - R |

Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | 1 0 0 1 0 | 0 0 1 0 0 | 0 0 1 0 0 |

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 15 597 23 44 551 12 6 36 20 6 46

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 17 687 26 51 634 14 7 5 41 23 7 53

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 17 687 26 51 634 14 7 5 41 23 7 53

Reduc Vol: 0 0 0 0 0 0 0 0 0 0

FinalVolume: 17 687 26 51 634 14 7 5 41 23 7 53

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 4.1 xxxx xxxx 7.1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflict Vol: 647 xxxx xxxx 713 xxxx xxxx xxxx xxxx xxxx

Potent Cap.: 948 xxxx xxxx 896 xxxx xxxx xxxx xxxx xxxx

Move Cap.: 948 xxxx xxxx 896 xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.06 xxxx xxxx 0.09 0.04 0.09 0.27 0.06 0.12

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.2 xxxx xxxx xxxx xxxx xxxx

Control Del: 8.9 xxxx xxxx 9.3 xxxx xxxx xxxx xxxx xxxx

LOS by Move: A * * * * * * * * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared Queue: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shrd CondEl: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * * * * * * * * *

ApproachDel: xxxx xxxx * * * * * * * * * * * *

ApproachLOS: * * * * * * * * * * * *

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

PM Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #1 SR 1 (Main St)/Airport Rd

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C [19.9]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 404 51

Growth Adj: 1.15 1.15 1.15

Initial Base: 0 465 59

Added Vol: 0 16 0

PasserbyVol: 0 0 0

Initial Fut: 0 481 59

User Adj: 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00

PHF Volume: 0 481 59

Reduc Vol: 0 0 0

FinalVolume: 0 481 59

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd confl:xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

Saturday MD Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #1 SR 1 (Main St // Airport Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [18.4]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 412 22

Growth Adj: 1.15 1.15 1.15

Initial Base: 0 474 25

Added Vol: 0 22 0

PasserbyVol: 0 0 0

Initial Fut: 0 496 25

User Adj: 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00

PHF Volume: 0 496 25

Reduc Vol: 0 0 0

FinalVolume: 0 496 25

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: 0.0 0xxxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del:xxxxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd confl:xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

PM Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 2.6 Worst Case Level of Service: D [33.0]

Street Name: SR 1 (Main St) Pudding Creek Rd

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 482 87 19 435 1 0 0 1 0 11

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 0 554 100 22 500 1 0 0 0 0 13

Added Vol: 0 16 0 0 16 0 0 0 0 0

PasserbyVol: 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 570 100 22 516 1 0 0 0 0 13

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 570 100 22 516 1 0 0 0 0 13

Reduc Vol: 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 570 100 22 516 1 0 0 0 0 13

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx xxxx

3.5 4.0 3.3

Capacity Module:

Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx

0.1 xxxx xxxx xxxx xxxx xxxx xxxx

9.0 xxxx xxxx xxxx xxxx xxxx xxxx

A * * * *

LT - LTR - RT LT - LTR - RT

xxxx xxxx xxxx xxxx xxxx xxxx

225 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx

2.1 xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx xxxx

33.0 xxxx

Shared LOS: * * * *

D *

ApproachDel: xxxx xxxx

* *

ApproachLOS: *

D *

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

Saturday MD Peak Hour - Future plus Project Conditions

Traffic Impact Study for The Avalon

City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #2 SR 1 (Main St)/Pudding Creek Rd

Average Delay (sec/veh): 3.8 Worst Case Level of Service: E [38.5]

Street Name: SR 1 (Main St) Pudding Creek Rd

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 12:15-13:15

Base Vol: 0 477 89 18 434 0 0 0 0 0 0 0 0 0 0 0 0

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 0 549 102 21 499 0 0 0 0 0 0 0 0 0 0 0 0

Added Vol: 0 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 571 102 21 516 0 0 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 571 102 21 516 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 571 102 21 516 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm:xxxxxx xxxx xxxx xxxx xxxx

3.5 4.0 3.3

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx xxxx xxxx xxxx

Potent Cap: xxxx xxxx xxxx xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx

0.1 xxxx xxxx xxxx xxxx xxxx xxxx

673 xxxx xxxx xxxx xxxx xxxx

927 xxxx xxxx xxxx xxxx xxxx

927 xxxx xxxx xxxx xxxx xxxx

0.02 xxxx xxxx xxxx xxxx xxxx

0.51 0.00 0.04

Level of Service Module:

2Way95thQ: xxxx xxxx xxxx xxxx xxxx xxxx

Control Del:xxxx xxxx xxxx xxxx xxxx

9.0 xxxx xxxx xxxx xxxx xxxx

Los by Move: * * * * *

A * * * *

LT - LTR - RT LT - LTR - RT

xxxx xxxx xxxx xxxx xxxx

212 192 491

Shared Cap.: xxxx xxxx xxxx xxxx xxxx

231 xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx

3.0 xxxx

Shrd Conflct:xxxx xxxx xxxx xxxx xxxx

38.5 xxxx

Shared LOS: * * * *

E *

ApproachDel: xxxx xxxx

3.8 5

ApproachLOS: *

E *

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

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #3 SR 1 (Main St)/Manzanita St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B [14.3]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 0 493

Growth Adj: 1.15 1.15 1.15

Initial Base: 0 567

Added Vol: 0 16

PasserbyVol: 0 0

Initial Fut: 0 583

User Adj: 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00

PHF Volume: 0 583

Reduc Vol: 0 0

FinalVolume: 0 583

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxxxx

FollowUpTIm:xxxxxx xxxx xxxxxx

FollowUpVol:xxxxxx xxxx xxxxxx

Capacity Module:

Conflict Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxx

Control Del:xxxxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd condEl:xxxxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS:

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

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #3 SR 1 (Main St) / Manzanita St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B [14.2]

Street Name: SR 1 (Main St)

Approach: North Bound

Movement: L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 0 507

Growth Adj: 1.15 1.15 1.15

Initial Base: 0 583

Added Vol: 0 22

PasserByVol: 0 0

Initial Fut: 0 605

User Adj: 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00

PHF Volume: 0 605

Reduc Vol: 0 0

FinalVolume: 0 605

Critical Gap Module:

Critical Gp:xxxxxx xxxx xxxxxx

FollowUpTIm:xxxxxx xxxx xxxxxx

FollowUpVol:xxxxxx xxxx xxxxxx

Capacity Module:

Cnflct Vol: xxxx xxxx xxxx

Potent Cap.: xxxx xxxx xxxx

Move Cap.: xxxx xxxx xxxx

Volume/Cap: xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxx

Control Del:xxxxxx xxxx xxxx

Los by Move: * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxxxx xxxx xxxx

Shrd condEl:xxxxxx xxxx

Shared LOS: * * *

ApproachDel:

ApproachLOS:

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

PM Future plus Project Thu Aug 20, 2015 09:33:11 Page 5-1
 PM Peak Hour - Future plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report											
2000 HCM Operations Method (Future Volume Alternative)											
Intersection #4 SR 1 (Main St)/Elm St											

Cycle (sec):	100	Critical Vol./Cap. (X):	0.494	Critical Vol./Cap. (X):	0.554						
Loss Time (sec):	8	Average Delay (sec/veh):	18.6	Loss Time (sec):	8						
Optimal Cycle:	32	Level of Service:	B	Optimal Cycle:	35						

Street Name:	SR 1 (Main St)	Elm St	Elm St	SR 1 (Main St)	Elm St	Elm St	Elm St	Elm St	Elm St	Elm St	Elm St
Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Permitted	Permitted	Protected	Protected	Protected	Protected	Protected	Protected	Permitted
Rights:	Include	Include	Include	Include	Rights:	Include	Include	Include	Rights:	Include	Include
Min. Green:	0	0	0	0	Min. Green:	0	0	0	Min. Green:	0	0
Y+R:	4.0	4.0	4.0	4.0	Y+R:	4.0	4.0	4.0	Y+R:	4.0	4.0
Lanes:	1 0	1 0	1 0	1 0	Lanes:	1 0	1 0	1 0	Lanes:	1 0	1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15											
Base Vol:	97	421	16	14	423	44	48	14	111	26	33
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Base:	112	484	18	16	486	51	55	16	128	30	38
Added Vol:	0	16	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	112	500	18	16	502	51	55	16	128	30	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	112	500	18	16	502	51	55	16	128	30	38
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	500	18	16	502	51	55	16	128	30	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	500	18	16	502	51	55	16	128	30	38

Saturation Flow Module:											
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.95	1.00	0.85	0.82	0.82	0.86	0.86	0.89
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.08	0.64	0.28	0.35
Final Sat.:	1805	1900	1615	1805	1900	1615	430	126	995	456	597

Capacity Analysis Module:											
Vol/Sat:	0.06	0.26	0.01	0.01	0.26	0.03	0.13	0.13	0.07	0.07	0.07
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***
Green/Cycle:	0.13	0.64	0.64	0.02	0.54	0.54	0.26	0.26	0.26	0.26	0.26
Volume/Cap:	0.49	0.41	0.02	0.41	0.49	0.06	0.49	0.49	0.49	0.25	0.25
Delay/Veh:	42.5	9.1	6.6	55.2	15.1	11.2	32.4	32.4	29.6	29.6	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	9.1	6.6	55.2	15.1	11.2	32.4	32.4	29.6	29.6	29.6
LOS by Move:	D	A	A	E	B	B	C	C	C	C	C
HCM2k95thQ:	8	14	0	2	18	2	11	11	5	5	5

Capacity Analysis Module:											
Vol/Sat:	0.08	0.26	0.01	0.01	0.25	0.06	0.18	0.18	0.06	0.06	0.06
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***
Green/Cycle:	0.14	0.57	0.57	0.03	0.45	0.45	0.45	0.45	0.45	0.33	0.33
Volume/Cap:	0.55	0.45	0.02	0.95	1.00	0.85	0.95	1.00	0.85	0.89	0.89
Delay/Veh:	43.0	13.0	9.6	54.6	20.7	15.9	28.9	28.9	28.9	24.3	24.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.0	13.0	9.6	54.6	20.7	15.9	28.9	28.9	28.9	24.3	24.3
LOS by Move:	D	B	A	D	C	B	C	C	C	C	C
HCM2k95thQ:	9	16	1	3	20	3	14	14	14	5	5

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PM Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SR 1 (Main St)/Spruce St

Average Delay (sec/veh): 1.2 Worst Case Level of Service: E [38.6]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2016 << 16:15-17:15

Base Vol: 31 533 7 4 566 4 3 1 46 8 0 2

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 36 613 8 5 651 5 3 1 53 9 0 2

Added Vol: 0 16 0 16 0 0 0 0 0 0 0 0

PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 36 629 8 5 667 5 3 1 53 9 0 2

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 36 629 8 5 667 5 3 1 53 9 0 2

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 36 629 8 5 667 5 3 1 53 9 0 2

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7 1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 672 xxxx xxxx 637 xxxx xxxx

Potent Cap.: 929 xxxx xxxx 956 xxxx xxxx

Move Cap.: 929 xxxx xxxx 956 xxxx xxxx

Volume/Cap: 0.04 xxxx xxxx 0.00 xxxx xxxx

Level of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.0 xxxx xxxx xxxx

Control Del: 9.0 xxxx xxxx 8.8 xxxx xxxx

Los by Move: A * * * * * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:

ApproachLOS:

ApproachLOS: *

ApproachLOS: C

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

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Saturday MD Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SR 1 (Main St //Spruce St

Average Delay (sec/veh): 0.8 Worst Case Level of Service: C [19.6]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 <<

Base Vol: 37 581 3 4 571 8 3 1 29 1 0 4

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 43 668 3 5 657 9 3 1 33 1 0 5

Added Vol: 0 22 0 17 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 43 690 3 5 674 9 3 1 33 1 0 5

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 43 690 3 5 674 9 3 1 33 1 0 5

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 43 690 3 5 674 9 3 1 33 1 0 5

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7.1 6.5 6.2

FollowupTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflct Vol: 683 xxxx xxxx

Potent Cap.: 920 xxxx xxxx

Move Cap.: 920 xxxx xxxx

Volume/Cap: 0.05 xxxx xxxx

Level of Service Module:

2Way95thQ: 0.1 xxxx xxxx

Control Del: 9.0 xxxx xxxx

Los by Move: A * * * * * * * *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx

Shared LOS: * * * * *

ApproachDel:

ApproachLOS:

ApproachLOS: *

ApproachLOS: C

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

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PM Peak Hour - Future plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 SR 1 (Main St)/Bush St

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: E [37.4]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 17 568 12 14 613 0 1 0 16 11 0 5

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 20 653 14 16 705 0 1 0 18 13 0 6

Added Vol: 0 16 0 0 16 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 20 669 14 16 721 0 1 0 18 13 0 6

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 20 669 14 16 721 0 1 0 18 13 0 6

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 20 669 14 16 721 0 1 0 18 13 0 6

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 7.1 6.5 6.2

FollowUpTimp: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 721 xxxx xxxx 683 xxxx xxxx

Potent Cap.: 890 xxxx xxxx 919 xxxx xxxx

Move Cap.: 890 xxxx xxxx 919 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx 0.02 xxxx xxxx

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx

Control Del: 9.1 xxxx xxxx 9.0 xxxx xxxx

Los by Move: A * * * A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx

Shared LOS: * * * * C

ApproachDel:

ApproachLOS:

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

Saturday MD Peak Hour - Future plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 SR 1 (Main St) / Bush St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C [22.1]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include

Lanes: 1 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 10 613 10 4 592 2 4 0 10 2 0 11

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 12 705 12 5 681 2 5 0 12 2 0 13

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 12 727 12 5 698 2 5 0 12 2 0 13

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 12 727 12 5 698 2 5 0 12 2 0 13

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 12 727 12 5 698 2 5 0 12 2 0 13

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx 7.1 6.5 6.2

FollowUpTimp: 2.2 xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 700 xxxx xxxx 738 xxxx xxxx

Potent Cap.: 906 xxxx xxxx 877 xxxx xxxx

Move Cap.: 906 xxxx xxxx 877 xxxx xxxx

Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx

Level Of Service Module:

2Way95thQ: 0.0 xxxx xxxx 0.0 xxxx xxxx

Control Del: 9.0 xxxx xxxx 9.1 xxxx xxxx

Los by Move: A * * * A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx

Shared LOS: * * * * C

ApproachDel:

ApproachLOS:

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

PM Future plus Project Thu Aug 20, 2015 09:33:11 Page 8-1

PM Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: E [36.1]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled

Rights: Include Include

Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 13 579 10 17 618 5 2 3 17 12 4 12

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 15 666 12 20 711 6 2 3 20 14 5 14

Added Vol: 0 16 0 16 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0

Initial Fut: 15 682 12 20 727 6 2 3 20 14 5 14

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 15 682 12 20 727 6 2 3 20 14 5 14

Reduc Vol: 0 0 0 0 0 0 0 0 0 0

FinalVolume: 15 682 12 20 727 6 2 3 20 14 5 14

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx 7.1 6.5 6.2

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Conflict Vol: 732 xxxx xxxx 693 xxxx xxxx 1495 1492 730 1498 688

Potent Cap.: 881 xxxx xxxx 911 xxxx xxxx 102 125 426 102 125

Move Cap.: 881 xxxx xxxx 911 xxxx xxxx 93 120 426 92 120

Volume/Cap: 0.02 xxxx xxxx 0.02 xxxx xxxx 0.02 0.03 0.05 0.15 0.04 0.03

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Control Del: 9.2 xxxx xxxx 9.0 xxxx xxxx xxxx xxxx xxxx xxxx

Ls by Move: A * * * * B * * * * B * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * C *

ApproachDel: xxxxxxxx * C *

ApproachLOS: * C *

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

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Saturday MD Future plus Protn Aug 20, 2015 09:33:05

Page 8-1

Page 8-1

PM Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon

Saturday MD Peak Hour - Future plus Project Conditions
Traffic Impact Study for The Avalon
City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [21.8]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 13 596 0 0 0 0 0 0 0

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 23 705 16 15 685 0 0 0 0 0 0 0

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 23 727 16 15 702 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 23 727 16 15 702 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 23 727 16 15 702 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflict Vol: 743 xxxx xxxx xxxx xxxx xxxx

Potent Cap.: 904 xxxx xxxx xxxx xxxx xxxx

Move Cap.: 904 xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.03 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx xxxx

Control Del: 9.1 xxxx xxxx 9.2 xxxx xxxx

Ls by Move: A * * * * A * * * * A * * * * B * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * C *

ApproachDel: xxxxxxxx * C *

ApproachLOS: * C *

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

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Page 8-1

Page 8-1

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [21.8]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 13 596 0 0 0 0 0 0 0

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 23 705 16 15 685 0 0 0 0 0 0 0

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 23 727 16 15 702 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 23 727 16 15 702 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 23 727 16 15 702 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflict Vol: 743 xxxx xxxx xxxx xxxx xxxx

Potent Cap.: 873 xxxx xxxx xxxx xxxx xxxx

Move Cap.: 873 xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx

Control Del: 9.1 xxxx xxxx 9.2 xxxx xxxx

Ls by Move: A * * * * A * * * * A * * * * B * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * C *

ApproachDel: xxxxxxxx * C *

ApproachLOS: * C *

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

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Page 8-1

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [21.8]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 13 596 0 0 0 0 0 0 0

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 23 705 16 15 685 0 0 0 0 0 0 0

Added Vol: 0 22 0 0 17 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 23 727 16 15 702 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 23 727 16 15 702 0 0 0 0 0 0 0

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 23 727 16 15 702 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx xxxx xxxx xxxx xxxx

FollowUpTm: 2.2 xxxx xxxx xxxx 3.5 4.0 3.3

Capacity Module:

Cnflict Vol: 743 xxxx xxxx xxxx xxxx xxxx

Potent Cap.: 873 xxxx xxxx xxxx xxxx xxxx

Move Cap.: 873 xxxx xxxx xxxx xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:

2Way95thQ: 0.1 xxxx xxxx 0.1 xxxx xxxx

Control Del: 9.1 xxxx xxxx 9.2 xxxx xxxx

Ls by Move: A * * * * A * * * * A * * * * B * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx xxxx xxxx xxxx

Shared LOS: * C *

ApproachDel: xxxxxxxx * C *

ApproachLOS: * C *

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

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Page 8-1

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #7 SR 1 (Main St)/Fir St

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C [21.8]

Street Name: SR 1 (Main St) Fir St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled

Rights: Include

Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 20 613 14 13 596 0 0 0 0 0 0 0

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1

PM Future plus Project Thu Aug 20, 2015 09:33:11 Page 9-1
 PM Peak Hour - Future plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: E [48.1]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound

Movement: L - T - R L - T - R

Control: Uncontrolled Uncontrolled

Rights: Include Include

Lanes: 1 0 0 1 0 1 0 0 1 0

Volume Module: >> Count Date: 16 Jul 2015 << 16:15-17:15

Base Vol: 21 567 24 54 605

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 24 652 28 62 696

Added Vol: 0 16 0 16

PasserByVol: 0 0 0 0

Initial Fut: 24 668 28 62 712

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 24 668 28 62 712

Reduc Vol: 0 0 0 0

FinalVolume: 24 668 28 62 712

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx

FollowUpTmpt: 2.2 xxxx xxxx

Capacity Module:

Conflict Vol: 716 xxxx xxxx

Potent Cap.: 894 xxxx xxxx

Move Cap.: 894 xxxx xxxx

Volume/Cap: 0.03 xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del: 0.1 xxxx xxxx

Los by Move: A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

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Saturday MD Future plus Proto Aug 20, 2015 09:33:05 Page 9-1

Saturday MD Peak Hour - Future plus Project Conditions
 Traffic Impact Study for The Avalon
 City of Fort Bragg

Level Of Service Computation Report

2000 HCM Unsigned Method (Future Volume Alternative)

Intersection #8 SR 1 (Main St)/Pine St

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: E [43.0]

Street Name: SR 1 (Main St)

Approach: North Bound South Bound

Movement: L - T - R L - T - R

Control: Uncontrolled Uncontrolled

Rights: Include Include

Lanes: 1 0 0 1 0 1 0 0 1 0

Volume Module: >> Count Date: 18 Jul 2015 << 13:00-14:00

Base Vol: 15 597 23 44 551

Growth Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

Initial Base: 17 687 26 51 634

Added Vol: 0 22 0 17

PasserByVol: 0 0 0 0

Initial Fut: 17 709 26 51 651

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 17 709 26 51 651

Reduc Vol: 0 0 0 0

FinalVolume: 17 709 26 51 651

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxx

FollowUpTm: 2.2 xxxx xxxx

Capacity Module:

Conflict Vol: 664 xxxx xxxx

Potent Cap.: 934 xxxx xxxx

Move Cap.: 934 xxxx xxxx

Volume/Cap: 0.02 xxxx xxxx

Level Of Service Module:

2Way95thQ:

Control Del: 8.9 xxxx xxxx

Los by Move: A *

Movement: LT - LTR - RT

Shared Cap.: xxxx xxxx xxxx

SharedQueue:xxxx xxxx xxxx

Shrd conflct:xxxx xxxx xxxx

Shared LOS: *

ApproachDel:

ApproachLOS:

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

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Appendix C

Roadway Segment Level of Service Calculations

DRAFT

Directional Two-Lane Highway Segment Analysis

Analyst	Allison Jardonin
Agency/Co.	CITY of Fort Bragg
Date	7/1/2015
Analysis Time Period	Weekday PM Peak
Hwy	SR 1
From/To	0.5 mi N/o & S/o Project Site
Jurisdiction	CITY of Fort Bragg
Analysis Year	2015
Description	Existing NB Conditions

Input Data

Hwy/way class	Class 2	Peak hour factor, PHF	1.00
Shoulder width	5.0 ft	% Trucks and busses	5 %
Lane width	11.0 ft	% Trucks crawling	0.0 %
Segment length	1.0 mi	% Truck free speed	2.0 mi/hr
Travel time level	Level	% Bus and van vehicles	2.0 %
Grade:	Up/down	% No passing zones	100 %
Analysis direction volume, Vd	388	Access point density	12 /mi
Opposing direction volume, Vo	381	veh/h	

Average Travel Speed

Direction	Field measured speed, (note-3) SFM	Opposing (o)
PCE for trucks, ET	2.0*	2.0*
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor, (note-5) FHV	0.952	0.952
Grade adj. factor, (note-1) FG	1.00	1.00
Directional flow rate, (note-2), vi	408	400 pc/h
Free-flow speed from Field Measurement:		
Observed total demand, (note-3), V		-
Estimated total free-flow speed:		-
Base free-flow speed, (note-3), BFFS	45.0	mi/h
Adj. for lane and shoulder width, (note-3), FA	3.0	mi/h
Adj. for access point density, (note-3), FA	3.0	mi/h
Free-flow speed, FFSD	40.3	mi/h
Adjustment for no-passing zones, fmp	2.7	mi/h
Average travel speed, ATSA	31.3	mi/h
Percent Free Flow Speed, PFFS	77.7 %	

Percent Time Spent Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, FHV	0.995	0.995
Grade adjustment factor, (note-1) FG	1.00	1.00
Directional flow rate, (note-2), vi	390	pc/h
Base free-flow speed from Field Measurement:	47.8	pc/h
Adjustment for no-passing zones, fmp	47.8	pc/h
Percent time spent following, PTFSD	65.2 %	

Level of Service and Other Performance Measures

Level of service, LOS	C
Volume capacity ratio, v/c	2.23
Peak-hour vehicle miles of travel, VMH15	97.9 veh.mi
Peak 15-min total travel time, TT15	388 min
Capacity from ATSA, CATS	3.1 veh/h
Capacity from FFSD, CDFPSP	0.0 veh/h
Directional capacity	1692 veh/h

Notes:

- 1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific segments are treated as level terrain.
- 2. On-going analysis is at 70 mph, a minimum analysis speed.
- 3. For the analysis direction only, and LOS > 200 veh/h.
- 4. For the analysis direction only.
- 5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Directional Two-Lane Highway Segment Analysis

Analyst Allison Jardonin

CLT of Fort Bragg

Date 7/1/2015

Analysis Time Period Weekday PM Peak

Hwyway SR 1

From/To 0.5 mi N/o & S/O Project Site

Jurisdiction CLT of Fort Bragg

Analysis Year 2015

Description Existing SB Conditions

Input Data

Direction	Field measured speed, (note-3) S FM	Observed total demand, (note-3) V	Opposing (o)
PE for trucks, ET	2.0*	-	2.0*
PE for RVs, ER	1.0	-	1.0
Heavy-vehicle adj. factor, (note-5) FHV	0.952	-	0.952
Grade adj. factor, (note-1) fg	1.00	-	1.00
Directional flow rate, (note-2), vi	400	-	408
Free-flow Speed from Field Measurement:			
Base free-flow speed:			veh/h
Adj. for lane and shoulder width, (note-3) fLS	45.0	-	45.0
Adj. for access point density, (note-3) FA	2.5	-	2.5
Free-flow speed, FFSd	40.8	-	40.8
Adjustment for no-passing zones, fnp	2.7	-	2.7
Average travel speed, ATSA	31.9	-	31.9
Percent Free Flow Speed, PFFS	78.1	-	78.1
Percent Time Spent Following			
Direction	Analys(d)	Opposing (o)	
PE for trucks, ET	1.1	1.1	
PE for RVs, ER	1.0	1.0	
Heavy-vehicle adjustment factor, FHV	0.995	0.995	
Grade adjustment factor, (note-1) fg	1.00	1.00	
Directional flow rate, (note-2), vi	333	333	pc/h
Base free-flow speed, (note-4) BFTSPd	41.7	41.7	pc/h
Adjustment for no-passing zones, fnp	47.8	47.8	pc/h
Percent time spent following, PTFSD	65.4	65.4	%

Level of Service and Other Performance Measures

Level of service, LOS	C
Volume capacity ratio /c	0.23
Peak-hour vehicle-miles of travel, VMH15	381
Peak 15-min total travel time, TM15 VMH60	3.0
Capacity from MTS, CATS	1692
Capacity from PRSP, CDPRSP	1692
Directional capacity	1692

* These items have been entered or edited to override calculated value
 * For the analysis direction only and for v=200 veh/h.

5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific factors are used as 1.00 for a 1% grade and 1.00 for a 10% grade.

2. If travel on a curve, the LOS is 1.70000/curvetime.

3. For the analysis direction only and for v>200 veh/h.

4. For the analysis direction only.

5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Passing Lane Analysis	
Total length of analysis segment, L _c	1.0 mi
Length of two-lane highway within effective passing lane, L _p	- mi
Length of two-lane highway downstream of the passing lane, L _d	- mi
Average travel speed, ATSD (from above)	31.9 mi/h
Percent time spent following, PTFSD (from above)	65.4 %
Level of service, LOS (from above)	C
Average Travel Speed with Passing Lane	
Downstream length of two-lane highway within effective passing lane for average travel speed, L _d	- mi
Length of two-lane highway downstream of effective passing lane	- mi
Adj. factor for the effect of passing lane	-
Average travel speed including passing lane, ATSP _p	-
Percent free flow speed including passing lane, PRFS _p	0.0
Percent Time Spent Following with Passing Lane	
Downstream length of two-lane highway within effective length of passing lane for percent time spent following, L _d	- mi
Length of two-lane highway downstream of effective length of the passing lane for percent time spent following, L _d	- mi
Adj. factor for the effect of passing lane on percent time spent following, L _d	-
Percent time spent following with Passing Lane	-
Percent including Passing Lane, PRFS _p	- %
Level of Service and Other Performance Measures with Passing Lane	
Level of Service including Passing Lane, LOSp	A
Peak 15-min total travel time, TFS	- veh-h
Bicycle Level of Service	
Posted speed limit, SP	-
Percent of segment with occupied on-highway parking	0
Pavement rating, P	381.0
Plowrate 15-course lane, YOL	381.0
Effective speed factor, St	41.42
Effective speed factor, Sl	41.42
Bicycle LOS Score, BLOS	3.70
Bicycle LOS	D
Notes:	
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific factors are used as 1.00 for a 1% grade and 1.00 for a 10% grade.	
2. If travel on a curve, the LOS is 1.70000/curvetime.	
3. For the analysis direction only and for v>200 veh/h.	
4. For the analysis direction only.	
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

Passing Lane Analysis

Directional Two-Lane Highway Segment Analysis

Analyst: Allison Jaronin

City of Fort Bragg

Date: 7/1/2015

Analysis Time Period: Weekend MD Peak

Hwy: SR 1

From/To: 0.5 mi N/o & S/o Project Site

Jurisdiction: City of Fort Bragg

Analysis Year: 2015

Description: Existing NB Conditions

Input Data

Direction	Analysis(d)	Opposing (o)
PEF for trucks, ET	2.0*	2.0*
PEF for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor, (note-5)	0.952	0.952
Grade adj. factor, (note-1) fg	1.00	1.00
Directional flow rate, (note-2) vi	419	425
Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) SFM	"	"
Observed total demand, (note-3) V	"	"
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	45.0	45.0
Adj. for lane and shoulder width, (note-3) fLS	3.0	3.0
Adj. for access point density, (note-3) FA	3.0	3.0
Free-flow speed, FFSd	40.3	40.3
Adjustment for no-passing zones, fnp	2.6	2.6
Average travel speed, ATSpd	31.2	31.2
Percent Free Flow Speed, PFFS	77.3	77.3

Percent Time Spent Following

Direction	Analysis(d)	Opposing (o)
PEF for trucks, ET	1.1	1.0
PEF for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.995	1.000
Grade adjustment factor, (note-1) fg	1.00	1.00
Directional flow rate, (note-2) vi	40.1	40.5
Base adjustment for no-passing zones, fnp	44.5	40.5
Adjustment for no-passing zones, fnp	46.2	40.5
Percent time spent following, PFFsd	46.5	40.5
	65.5	65.5

Level of Service and Other Performance Measures

Level of service, LOS	C
Volume capacity ratio, v/c	0.24
Peak-hour vehicle-miles of travel, VMH15	369
Peak 15-min total travel time, TT15	3.2
Capacity from ATSpd, CATS	1675
Capacity from PFFS, CDPSF	1700
Directional capacity	1700

* These items have been entered or edited to override calculated value

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v1 (vd or vo) >> 1,700 pch, terminate analysis-the LOS is F.
3. For the analysis direction only, and for v>200 veh/h.
4. For the alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis

Analyst: Allison Jarmonin

CITY of Fort Bragg

Date: 7/1/2015

Analysis Time Period: Weekend MD Peak

H-Gway: SR 1

From/To: 0.5 mi N/o & S/o Project Site

Jurisdiction: CITY of Fort Bragg

Analysis Year: 2015

Description: Existing SB Conditions

Input Data

Direction: PE for trucks, ET

PE for RVs, ER

Heavy-vehicle adj. factor, (note-5)

FHV

Grade adj. factor, (note-1)

f_g

Directional flow rate, (note-2)

v_i

Free-Flow Speed from Field Measurement:

Field measured speed, (note-3) S FM

Observed total demand, (note-3) V

Estimated free-flow speed:

Base free-flow speed, (note-3) BFFS

Adj. for lane and shoulder width, (note-3) f_{LSS}

Adj. for access point density, (note-3) f_A

Free-flow speed, FFSd

Adjustment for no-passing zones, f_{NPZ}

Average travel speed, ATSpd

Percent Free Flow Speed, PFFS

Analysis(d)

Opposing (o)

2.0*

1.0

0.952

1.00

41.9

pc/h

veh/h

45.0

mi/h

2.5

mi/h

4.0

mi/h

2.6

mi/h

31.6

mi/h

77.5

%

Percent Time Spent Following

Analysis(d)

Opposing (o)

1.0

1.0

0.995

1.00

pc/h

40.1

veh/h

45.9

%

46.2

veh/h

66.1

%

Level of Service and Other Performance Measures

Level of service, LOS

Volume capacity ratio, v/c

Peak-hour vehicle miles of travel, VMH15

Peak 15-min total travel time, TT15

Capacity from ATSpd, CATS

Capacity from PRSP, CDPRSP

Directional capacity

C

0.24

veh.mi

40.5

veh.mi

3.2

veh/h

1700

veh/h

* These items have been entered or edited to override calculated value

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain

is one of the base conditions. For the purpose of grade adjustment, specific

degrade segments are treated as level terrain.

2. If v1 (vd or vo) >> 1,700 pc/h, terminate analysis-the LOS is F.

3. For the analysis direction only, and for v>200 veh/h.

4. For the analysis direction only, and for v>200 veh/h.

5. Use Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a

specific downgrade.

Passing Lane Analysis

Total length of analysis segment, L _t	1.0	mi
Length of two-lane highway upstream of the passing lane, L _u	-	mi
Length of passing lane including tapers, f _{PL}	31.6	mi
Average travel speed, f _{ATSpd} (from above)	66.1	mi/h
Level of service, LOS (from above)	C	
<u>Average Travel Speed with Passing Lane</u>		
Downstream length of two-lane highway within effective length of two-lane highway downstream of the passing lane, L _d	-	mi
Length of two-lane highway downstream of the passing lane, L _d	-	mi
Adj. factor for the effect of passing lane on average speed, f _{PL}	-	
Average travel speed including passing lane, ATSpd _{PL}	-	
Percent free flow speed including passing lane, PRSP _{PL}	0.0	%
Percent time spent following with Passing Lane	-	
<u>Percent Time-Spent Following with Passing Lane</u>		
Downstream length of two-lane highway within effective length of passing lane for percent time spent following, L _d	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time spent following, L _d	-	mi
Adj. factor for the effect of passing lane on percent time spent following, f _{PL}	-	
Average travel speed including passing lane, ATSpd _{PL}	-	
Percent time spent following including passing lane, PRSP _{PL}	-	%
<u>Level of Service and Other Performance Measures with Passing Lane</u>		
Level of service including passing lane, LOS _{PL}	A	
Peak 15-min total travel time, TT15	-	veh-h
Bicycle Level of Service	-	
Posted speed limit, SP	0	
Percent of segment with occupied on-highway parking	3	
Pavement rating, P	40.0	
Flow rate in outside lane, VOL	21.0	
Effective width of outside lane, WE	21.00	
Effective speed factor, ST	4.42	
Bicycle LOS Score, BLOS	3.77	
Bicycle LOS	D	

Bi-directional Two-Lane Highway Segment Analysis

Input Data		Analysis(d)		Opposing (o)		Opposing (o)		Level of Service		Other Performance Measures	
Highway class	Class 2	Peak hour factor, PHF	1.00	% Trucks and buses	5	% Trucks crawling	0.0	veh-mi	0.26	veh-mi	0.12
Shoulder width	ft	% Trucks, %	5	% Trucks crawling	0.0	% Truck crawl speed	0.0	veh-mi	0.112	veh-mi	44.6
Lane width	ft	% Truck crawl speed	0.0	% Truck crawl speed	0.0	% No passing zones	100	veh-mi	0.0	veh-mi	3.7
Segment length	mi	% No passing zones	100	Access point density	12	Access point density	12	veh-mi	0	veh-mi	1700
Number of main lanes	-	Access point density	12	/mi				veh-mi	1700	veh-mi	
Left side grade	%							veh-mi		veh-mi	
Right side grade	%							veh-mi		veh-mi	
Analysis direction volume, Vd	446	Average Travel Speed	veh/h					veh-mi		veh-mi	
Opposing direction volume, Vo	438		veh/h					veh-mi		veh-mi	
Direction		Analysis(d)		Opposing (o)				veh-mi		veh-mi	
ET		2.0*		2.0*				veh-mi		veh-mi	
ETCE for trucks, ER		1.0		1.0				veh-mi		veh-mi	
ETCE for RVs, ER		1.0		1.0				veh-mi		veh-mi	
Vehicle adj.		0.952		0.952				veh-mi		veh-mi	
2nd-grade vehicle adj. factor, (note-5) FHV		1.0		1.0				veh-mi		veh-mi	
2nd-grade adj. factor, (note-1) FG		458		460				veh-mi		veh-mi	
Field measurement:								veh-mi		veh-mi	
Measured speed, (note-3) S								veh-mi		veh-mi	
Observed total demand, (note-3) V								veh-mi		veh-mi	
Free-flow speed from Field Measurement:								veh-mi		veh-mi	
Measured free-flow speed, (note-3) VFFS								veh-mi		veh-mi	
Base free-flow speed, (note-3) BFFS								veh-mi		veh-mi	
Free-flow speed for lane and shoulder width, (note-3) FLS		45.0		45.0				veh-mi		veh-mi	
Free-flow speed for access point density, (note-3) FA		1.7		1.7				veh-mi		veh-mi	
Free-flow speed, FFSA		3.0		3.0				veh-mi		veh-mi	
Adjustment for no-passing zones, fnp		40.3		40.3				veh-mi		veh-mi	
Average travel speed, ATSp		2.4		2.4				veh-mi		veh-mi	
Percent Free Flow Speed, PFFS		76.1		66.8				veh-mi		veh-mi	
Percent Time Spent Following								veh-mi		veh-mi	
Direction		Analysis(d)		Opposing (o)				veh-mi		veh-mi	
ET		1.0		1.0				veh-mi		veh-mi	
ETCE for trucks, ER		1.0		1.0				veh-mi		veh-mi	
ETCE for RVs, ER		1.000		1.000				veh-mi		veh-mi	
Heavy vehicle adjustment factor, (note-1) FHV		1.00		1.00				veh-mi		veh-mi	
2nd-grade adjustment factor, (note-1) FG		4.65		4.65				veh-mi		veh-mi	
Adjustment for a detector calibration coefficient, (note-4) ERTSP		0.7		0.7				veh-mi		veh-mi	
Adjustment for no-passing zones, fnp		43.9		43.9				veh-mi		veh-mi	
Percent time spent following, PTFSP		66.8		66.8				veh-mi		veh-mi	
Level of Service and Other Performance Measures								veh-mi		veh-mi	
Level of service, LOS								veh-mi		veh-mi	
Peak hour factor, PHF								veh-mi		veh-mi	
Peak hour vehicle miles of travel, WM15								veh-mi		veh-mi	
Peak hour vehicle miles of travel, WM60								veh-mi		veh-mi	
Capacity from ATS, CATS								veh-mi		veh-mi	
Capacity from PRSF, CGTSP								veh-mi		veh-mi	
Capacity from CGTSP								veh-mi		veh-mi	

Passing Lane Analysis

Level of service, LOSd (from above)	Average Travel Speed with Passing Lane	Percent Time Spent-Following with Passing Lane
Total length of analysis segment, L _t , mi	1.0	mi
Total length of one-way analysis segment of the passing lane, L _u , mi	-	mi
Length of passing lane, including lapses, L _p , mi	-	mi
Average travel speed, ATSPd (from above)	30.7	mi/h
Percent time spent-following, PTSFd (from above)	68.8	%
C		
Level of Service and Other Performance Measures with Passing Lane	Bicycle Level of Service	
Downstream length of two-lane highway within effective length of passing lane for average travel speed, L _d , mi	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, L _d , mi	-	mi
Adj. factor for the effect of passing lane on average speed, f _{pl}	-	
Average travel speed including passing lane, ATSP _{fpl}	-	
Percent free flow including passing lane, PTSF _{fpl}	0.0	%
Percent time spent-following including passing lane, PTSF _{fpl}	-	%
Level of Service and Other Performance Measures with Passing Lane	Bicycle Level of Service	
Downstream length of two-lane highway within effective length of passing lane for percent time spent-following, L _d , mi	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time spent-following, L _d , mi	-	mi
Adj. factor for the effect of passing lane on percent time spent-following, f _{pl}	-	
Percent free flow including passing lane, PTSF _{fpl}	-	
Percent time spent-following including passing lane, PTSF _{fpl}	-	%
Level of Service and Other Performance Measures with Passing Lane	Bicycle Level of Service	
Posted speed limit, sp	45	mi/h
Percent of segment with occupied on-highway parking	0	
Pavement rating, P	3	
Flow rate in outside lanes, v _{OL}	446.0	veh/h
Effective width of outside lane, we	21.00	ft
Effective speed factor, St	4.42	
Bicycle LOS Score, BLOS	3.77	
D		
Notes:		
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific degrade segments are treated as level terrain.		
2. If either or both v _{OL} >> 1,000 veh/h, performance analysis is LOS F.		
3. For the small as direction only and for v<200 veh/h.		
4. For the small as direction only and for v>200 veh/h.		
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.		
* These items have been entered or edited to override calculated value		

* These items have been entered or edited to override calculated values specific downgrade.

Directional Two-Lane Highway Segment Analysis

Analyst	Allison Jarmon	Agency/Co.	CITY of Fort Bragg
Date Performed	7/1/2015	Analysis Time Period	Weekday PM Peak
H-Gauge	Avg	From To	SR 1
From To	0.5 mi N/o & S/o Project Site	Length	1.0 mi
Analysis Year	2015	Description Future SB Conditions	CITY of Fort Bragg

Input Data

Highway class	Class 2	Peak hour factor, PHF	1.00
Shoulder width	5.0 ft	% Trucks and buses	5.0 %
Lane width	5.0 ft	% Trucks, busses, and vans	0.0 %
Shoulder width	1.0 ft	% Recreational vehicles	0.0 %
Terrain type	Urban	% No-passing zones	2.0 %
Grade:	-	Access point density	100 /mi
Length	mi		
Up/down	-		
Analysis direction volume, Vd	438 veh/h		
Opposing direction volume, Vo	446 veh/h		

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PE for trucks, ET	2.0*	2.0*
PE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor, (note-5) FHV	0.952	0.952
Grade(d), factor, (note-1) fg	1.00	1.00
Directional flow rate, (note-2) vi	460 pc/h	468 pc/h
Free-flow speed from field measurement:		
Field measured speed, (note-3) SF	-	mi/h
Estimated total demand, (note-3) V	-	veh/h
Estimated free-flow speed:		
Base free-flow speed, (note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	45.0	mi/h
Adj. for access point density, (note-3) fA	2.5	mi/h
Free-flow speed, FFSd	40.8	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATSA	31.2	mi/h
Percent Free Flow Speed, PFFS	76.5	mi/h

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PE for trucks, ET	1.0	1.0
PE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, FHV	1.00	1.000
Grade adjustment factor, (note-1) fg	1.00	1.000
Directional flow rate, (note-2) vi	446 pc/h	446 pc/h
Base percent time spent following, (note-4) BPFSPd	47.1 %	47.1 %
Adjustment for no-passing zones, fnp	43.9	43.9 %
Percent time-spent-following, PFSd	66.9	66.9 %

Level of Service and Other Performance Measures
Level of service, LOS
Volume of traffic, V
Peak 15-min vehicle-miles of travel, VMT15
Peak 15-min vehicle-miles of travel, VMT60
Capacity from ATS, C4ATS
Capacity from PRSP, CPSP
Directional capacity

<u>Passing Lane Analysis</u>	
Total length of analysis segment, L _t	1.0 mi
Length of two-lane highway upstream of the passing lane, L _u	- mi
Length of passing lane including tapers, L _p	31.2 mi
Average travel speed, sp _{av} (from above)	68.3 mi/h
Percent time spent following (from above)	C
Level of service, LOS (from above)	C
<u>Average Travel Speed with Passing Lane</u>	
Downstream length of two-lane highway within effective travel lane, L _d	- mi
Length of two-lane highway downstream for average travel speed, L _d	- mi
Adj. factor for the effect of passing lane speed, L _d	-
Average speed, sp _{av}	-
Average travel speed including passing lane, ATSP ₁	-
Percent free flow speed including passing lane, PRSP ₁	0.0 %
Percent time spent following with passing lane	- %
<u>Percent time spent following with Passing Lane</u>	
Downstream length of two-lane highway within effective travel lane, L _d	- mi
Length of passing lane for percent time spent following, L _d	- mi
Length of two-lane highway downstream of effective length of passing lane for percent time spent following, L _d	- mi
Adj. factor for the effect of passing lane speed, L _d	-
Percent time spent following, sp _{av}	-
Percent time spent following, fp ₁	-
Including passing lane, PRSP ₁	- %
<u>Level of Service and Other Performance Measures with Passing Lane</u>	
Level of service including passing lane, LOS ₁	A
Peak 15-min total travel time, TT15	-
Bicycle Level of Service	-
Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	0
Flow rate in outside lane, VOL	3
Peak 15-min travel time, TT15	-
A	veh-h
Bicycle Level of Service	-
Notes:	
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.	
2. If v1 (vd or vo) >> 1,700 pc/h, terminate analysis-the LOS is F.	
3. For the analysis direction only, and for v>200 veh/h.	
4. For the analysis direction only, and for v>200 veh/h.	
5. See Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.	
* These items have been entered or edited to override calculated value	

Passing Lane Analysis									
Total length of analysis segment, L _a mi									
Length of two-lane highway upstream of the passing lane, L _u mi									
Length of passing lane including tapers, f _{pl} mi									
Average travel speed, f _{av} mi/h									
Percent time-spent-following (from above)									
Level of service, LOS D									
Average Travel Speed with Passing Lane									
Downstream length of two-lane highway within effective lane for average travel speed, L _d mi									
Length of two-lane highway downstream for average travel speed, L _d mi									
Adj. factor for the effect of passing lane on average speed, f _{pl}									
Average travel speed including passing lane, ATSp ₁ mi/h									
Percent free flow speed including passing lane, PRSp ₁ 0.0 %									
Percent Time-Spent-Following with Passing Lane									
Downstream length of two-lane highway within effective lane									
Length of two-lane highway downstream for percent time-spent-following, L _d mi									
Adj. factor for the effect of passing lane on percent time-spent-following, L _d mi									
Percent time-spent-following, f _{pl}									
Percent time-spent-following including passing lane, PRSp ₁ 0.0 %									
Level of Service and Other Performance Measures with Passing Lane									
Level of service including passing lane, LOS ₁ A									
Peak 15-min total travel time, TR ₁₅ - veh-h									
Bicycle Level of Service									
Posted speed limit, Sp									
Percent of segment with occupied on-highway parking									
Pavement rating, P									
Flow rate in outside lane, VOL									
Peak 15-min total travel time, TR ₁₅ - veh-h									
Effective width of outside lane, WE									
Effective speed factor, ST									
Bicycle LOS Score, BILOS									
Notes:									
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.									
2. If v ₁ (vd or vo) > 1,700 pch, terminate analysis-the LOS is F.									
3. For the analysis direction only, and for v>200 veh/h.									
4. For the analysis direction only, and for v>200 veh/h.									
5. Use Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.									
Input Data									
Highway class Class 2 1.00									
Shoulder width 5.0 ft									
Lane width 5.0 ft									
Terrain type Mountain									
Grade: adj. factor, (note-1) f _g 0.00									
Directional flow rate, (note-1) f _v 1.00									
Analysis direction volume, vd 459 veh/h									
Opposing direction volume, vp 466 veh/h									
Average Travel Speed									
Direction PCE for trucks, ET 2.0*									
PCE for RVs, ER 1.0									
Heavy-vehicle adj. factor, (note-5) f _{HV} 0.952									
Grade(adj.) factor, (note-1) f _g 0.952									
Directional flow rate, (note-1) f _v 1.00									
Free-flow speed from field measurement: Field measured speed, (note-3) S FM 482 pc/h									
Estimated total demand, (note-3) V -									
Estimated Free-Flow Speed: Base free-flow speed, (note-3) BFFS 45.0 mi/h									
Adj. for lane and shoulder width, (note-3) fLS 4.7 mi/h									
Adj. for access point density, (note-3) fA 3.0 mi/h									
Free-flow speed, FFSD 40.3 mi/h									
Adjustment for no-passing zones, f _{np} 2.3 mi/h									
Average travel speed, ATSp 30.5 mi/h									
Percent Free Flow Speed, PFFS 75.6 %									
Direction Analysis(d)									
Opposing (o) 1.0									
Direction PCE for trucks, ET 1.0									
Heavy-vehicle adjustment factor, f _{HV} 1.00									
Grade adjustment factor, (note-1) f _g 1.00									
Directional flow rate, (note-2), f _v 459 pc/h									
Base free-flow speed, (note-3) BFFS 45.9 mi/h									
Adj. for lane and shoulder width, (note-3) fLS 42.9 mi/h									
Adj. for no-passing zones, f _{np} 42.7 mi/h									
Percent time-spent-following, PTFSD 70.1 %									
Level of Service and Other Performance Measures									
Level of service, LOS D									
Volume capacity ratio, v/c 0.27									
Peak-hour vehicle-miles of travel, VMH 15.45 mi									
Peak 15-min total travel time, TR ₁₅ 3.8 mi									
Capacity from MTS, CATS 1683 veh/h									
Directional capacity 1700 veh/h									

* These items have been entered or edited to override calculated value

Notes:

- 1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
- 2. If v₁ (vd or vo) > 1,700 pch, terminate analysis-the LOS is F.
- 3. For the analysis direction only, and for v>200 veh/h.
- 4. For the analysis direction only, and for v>200 veh/h.
- 5. Use Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis	
Analyst	Allison Jarmon
Agency/Co.	CITY of Fort Bragg
Date Performed	7/1/2015
Analysis Time Period	Weekend MD Peak
H-Gauge	SR 1
From To	0.5 mi N/o & S/o Project Site
City of Fort Bragg	2 miles
Analysis Year	2015
Description Future SB Conditions	
Input Data	
Highway class	Class 2
Shoulder width	5.0 ft
Lane width	5.0 ft
Shoulder length	1.0 mi
Terrain type	Urban
Grade:	0.0% inclining
Length:	1.0 mi
Up/down:	% Recreational vehicles
Analysis direction volume, vd	466
Opposing direction volume, vo	459
Average Travel Speed	
Direction	Analysis(d)
PCE for trucks, ET	Peak hour factor, PHF
PCE for RVs, ER	1.0
Heavy-vehicle adj. factor, (note-5)	1.0
Grade(d), factor, (note-1)	0.952
Directional flow rate, (note-2) vi	1.00
Free-flow speed from field measurement:	489 pc/h
Field measured speed, (note-3) SF	-
Estimated total demand, (note-3) v	2.0*
Base free-flow speed, (note-3)	45.0
Adj. for lane and shoulder width, (note-3)	45.0
Adj. for access point density, (note-3) FA	2.5
Free-flow speed, FFSd	40.8
Adjustment for no-passing zones, fpp	2.3
Average travel speed, ATSA	30.9
Percent Free Flow Speed, PFFS	75.8 %
Percent Time Spent Following	
Direction	Analysis(d)
PCE for trucks, ET	Opposing (o)
PCE for RVs, ER	1.0
Heavy-vehicle adjustment factor, HVF	1.00
Grade adjustment factor, (note-1) fg	1.00
Directional flow rate, (note-2) vi	466 pc/h
Base free-flow speed, (note-3)	45.2
Adj. for no-passing zones, fpp	42.7
Percent time spent following, PTFSPd	65.7 %
Level of Service and Other Performance Measures	
Level of service, LOS	C
Volume capacity ratio, v/c	0.27
Peak-hour vehicle-miles of travel, VM15	veh.mi
Peak-15-min total travel time, TM15	46.6 min
Capacity from MTS, CATS	3.8 veh/h
Capacity from PRSP, CDPRSP	0 veh/h
Directional capacity	1700

Passing Lane Analysis	
Total length of analysis segment, Lt	1.0 mi
Length of two-lane highway upstream of the passing lane, Lu	- mi
Length of passing lane including tapers, fpL	- mi
Average travel speed from above	38.9 mi/h
Percent time spent following from above	0.7 %
Level of service, LOS (from above)	C
Average Travel Speed with Passing Lane	
Downstream length of two-lane highway within effective travel speed, Lde	- mi
Length of two-lane highway downstream for average travel speed, Ld	- mi
Adj. factor for the effect of passing lane on average speed, fpL	-
Average travel speed including passing lane, ATSP1	-
Percent free flow speed including passing lane, PRSP1	0.0 %
Percent Time Spent Following with Passing Lane	
Downstream length of two-lane highway within effective travel length of passing lane for percent time spent following, Lde	- mi
Length of two-lane highway downstream of effective length of the passing lane for percent time spent following, Ld	- mi
Adj. factor for the effect of passing lane on percent time spent following, fpL	-
Percent time spent following, fpL including passing lane, PRSP1	- %
Level of Service and Other Performance Measures with Passing Lane	
Level of service including passing lane, LOS1	A
Peak 15-min total travel time, TM15	- veh-h
Bicycle Level of Service	
Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, VOL	466.0
Effective width of outside lane, WE	21.00
Effective speed factor, ST	4.42
Bicycle LOS Score, BLOS	3.79
Bicycle LOS	D
Notes:	
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.	
2. If v_i (vd or vo) $>$ 1,700 pc/h, terminate analysis-the LOS is F.	
3. For the analysis direction only, and for $v > 20$ veh/h.	
4. For the analysis direction only, and for $v > 20$ veh/h.	
5. Use alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.	
* These items have been entered or edited to override calculated value	

Directional Two-Lane Highway Segment Analysis

Analyst	Allison Jarmon	Agency/Co.	City of Fort Bragg
Date Performed	7/1/2015	Analysis Time Period	Weekday PM Peak
H-Gauge	SR 1	From/To	0.5 mi N/o & S/o Project Site
Analysis Year	2015	Description	Existing plus Project NB
Opposing direction		Existing plus Project NB	
<u>Input Data</u>			
Highway class	Class 2	Peak hour factor, PHF	1.00
Shoulder width	5.0 ft	% Trucks and buses	5.0 %
Lane width	5.5 ft	% Trucks, heavy vehicles	0.0 %
Shoulder width	1.0 ft	% Recreational vehicles	0.0 %
Terrain type	Flat	% No-passing zones	2.0 %
Grade:	-	Access point density	100 /mi
Length:	mi		
Up/down:	%		
Analysis direction volume, vd	396 veh/h		
Opposing direction volume, vo	413 veh/h		
<u>Average Travel Speed</u>			
Direction	Analysis(d)	Opposing (o)	
PCE for trucks, ET	2.0*	2.0*	
PCE for RVs, ER	1.0	1.0	
Heavy-vehicle adj. factor, (note-5) FHV	0.952	0.952	
Grade(d), factor, (note-1) f _g	1.00	1.00	
Directional flow rate, (note-2) vi	416 pc/h	434 pc/h	
Free-flow speed from field measurement:			
Field measured speed, (note-3) SF	-	mi/h	
Estimated total demand, (note-3) V	-	veh/h	
Estimated Free-Flow Speed:			
Base free-flow speed, (note-3) BFFS	45.0	mi/h	
Adj. for lane and shoulder width, (note-3) f _{LS}	1.0	mi/h	
Adj. for access point density, (note-3) f _A	3.0	mi/h	
Free-flow speed, FFSd	40.3	mi/h	
Adjustment for no-passing zones, f _{NPZ}	2.5	mi/h	
Average travel speed, ATSA	31.2	mi/h	
Percent Free Flow Speed, PFFS	77.3	mi/h	
<u>Percent Time-Spent-Following</u>			
Direction	Analysis(d)	Opposing (o)	
PCE for trucks, ET	1.1	1.0	
PCE for RVs, ER	1.0	1.000	
Heavy-vehicle adjustment factor, FHV	0.995	1.000	
Grade adjustment factor, (note-1) f _g	1.0	1.000	
Directional flow rate, vi	3.80	pc/h	
Base percent time spent following, (note-4) BPPSFd	43.3	%	
Adjustment for no-passing zones, f _{NPZ}	44.7	%	
Percent time-spent-following, PTFSD	66.7	%	

Direction	Level of service and Other Performance Measures
PE for trucks, ET	0.23 veh-mi
PE for RVs, ER	0.98 veh-mi
Peak 15-min vehicle-miles of travel, WMT15	3.86 veh-mi
Peak 15-min total travel time, TRT15	3.2 veh-h
Base percent time spent following	1.75 veh/h
Base capacity from ATS, C4ATS	1700 veh/h
Capacity from PTFSD, CPPTSF	1700 veh/h
Directional capacity	

<u>Passing Lane Analysis</u>			
Total length of analysis segment, L _t	1.0 mi	Length of two-lane highway upstream of the passing lane, L _u	- mi
Length of passing lane including tapers, f _{PL}	- mi	Average travel speed, f _{SP} (from above)	31.2 mi/h
Percent time spent following (from above)	65.7 %	Level of service, LOS (from above)	C
<u>Average Travel Speed with Passing Lane</u>			
Downstream length of two-lane highway within effective length of passing lane for average travel speed, L _d	- mi	Length of two-lane highway downstream of average travel speed, L _d	- mi
Adj. factor for the effect of passing lane on average speed, f _{PL}	-	Adj. factor for percent time-spent-following, f _{PL}	-
Average travel speed including passing lane, ATSP ₁	-	Percent free flow speed including passing lane, PFSPL	0.0 %
Percent time-spent-following with Passing Lane	-	Percent time-spent-following and including passing lane	-
<u>Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, L_d</u>			
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, L _d	- mi	Adj. factor for percent time-spent-following, f _{PL}	-
Adj. on percent time-spent-following, f _{PL}	-	Percent time-spent-following	-
Percent time-spent-following including passing lane, PFSPL	- %	Including passing lane, PFSPL	- %
<u>Level of Service and Other Performance Measures with Passing Lane</u>			
Level of service including passing lane, LOS ₁	A	Peak 15-min total travel time, TRT ₁₅	- veh-h
<u>Bicycle Level of Service</u>			
Posted speed limit, Sp	0	Percent of segment with occupied on-highway parking	396.0
Percent of segment with occupied on-highway parking	3	Pavement rating, P	21.00
Flow rate in outside lane, VOL	-	Effective width of outside lane, WE	4.42
Peak 15-min travel time, TRT ₁₅	-	Bicycle LOS Score, BLOS	3.72
Bicycle LOS	D		
Notes:			
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.			
2. If v _i (vd or vo) > 1,700 pc/h, terminate analysis-the LOS is F.			
3. For the analysis direction only, and for v>200 veh/h.			
4. For the analysis direction only, and for v>200 veh/h.			
5. See Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.			
* These items have been entered or edited to override calculated value			

Passing Lane Analysis

Directional Two-Lane Highway Segment Analysis

Input Data		Analysis(d)		Opposing (o)	
Highway class	Class 2	Peak hour factor, PHF	1.00	%	%
Shoulder width	5.0 ft	% Trucks and buses	5.0	%	%
Lane width	5.0 ft	% Trucks, heavy vehicles	0.0	mi/hr	mi/hr
Grade	1.0% mi	% Recreational vehicles	0.0		
Terrain type	Urban	% No-passing zones	2.0		
Grade(d), factor, (note-1)	1.00	Access point density	100	%	%
Directional flow rate, (note-2) vi	4.13			/mi	
Opposing direction volume, vd	3.96				
Average Travel Speed		Opposing (o)		Opposing (o)	
Direction		2.0*	1.0		
PCE for trucks, ET		0.952	0.952		
PCE for RVs, ER		1.0	1.0		
Heavy-vehicle adj. factor, (note-5) FHV		1.00	1.00		
Grade(d), factor, (note-1) fg		4.16	4.16	pc/h	pc/h
Directional flow rate, (note-2) vi					
Free-flow speed from field measurement:				mi/h	mi/h
Field measured speed, (note-3) SF				-	veh/h
Estimated total demand, (note-3) V					
Estimated free-flow speed:					
Base free-flow speed, (note-3) BFFS				45.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS				1.0	mi/h
Adj. for access point density, (note-3) FA				2.5	mi/h
Free-flow speed, FFSd				40.8	mi/h
Adjustment for no-passing zones, fnp				2.6	mi/h
Average travel speed, ATSA				31.6	mi/h
Percent Free Flow Speed, PFFS				77.4	pc/h
Percent Time-Spent-Following, PTFSD				67.0	%
Direction		Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0			1.0	
PCE for RVs, ER	1.0			1.0	
Heavy-vehicle adjustment factor, FHV	1.00			0.995	
Grade adjustment factor, (note-1) fg	1.0			1.000	
Directional flow rate, (note-1) vi	4.13			4.13	pc/h
Base percent time spent following, (note-4) BPTSFd	43.7			39.8	pc/h
Adjustment for no-passing zones, fnp	45.7				
Percent Time-Spent-Following, PTFSD	67.0				
Level of Service and Other Performance Measures		Opposing (o)		Opposing (o)	
Level of service, LOS				0.24	
Vehicle capacity ratio, V/c				10.3	veh-mi
Peak 15-min vehicle-miles of travel, VM15				41.3	veh-mi
Peak 15-min total travel time, TT15				3.3	veh-h
Capacity from ATS, C4ATS				0	veh/h
Capacity from PRSP, CPSP				1692	veh/h
Directional capacity				1692	

Passing Lane Analysis	
Total length of analysis segment, L _a	1.0 mi
Length of two-lane highway upstream of the passing lane, L _u	- mi
Length of passing lane including tapers, fPL	- mi
Average travel speed, fPL (from above)	31.6 mi/h
Percent time spent following (from above)	67.0
Level of service, LOS (from above)	C
Average Travel Speed with Passing Lane	
Downstream length of two-lane highway within effective lane length of passing lane for average travel speed, L _d	- mi
Length of two-lane highway downstream of average travel speed, L _d	- mi
Adj. factor for the effect of passing lane on average speed, fPL	-
Average travel speed including passing lane, ATSP ₁	-
Percent free flow speed including passing lane, PRSP ₁	0.0
Percent time-spent-following with Passing Lane	%
Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, L _d	
Length of two-lane highway downstream of effective length of passing lane for percent time-spent-following, L _d	- mi
Adj. factor for percent time-spent-following, L _d	-
Percent time-spent-following, fPL	-
Percent time-spent-following including passing lane, PRSP ₁	- %
Level of Service and Other Performance Measures with Passing Lane	
Level of service including passing lane, LOS ₁	A
Peak 15-min total travel time, TT15	- veh-h
Bicycle Level of Service	
Posted speed limit, Sp	0
Percent of segment with occupied on-highway parking	3
Pavement rating, P	413.0
Flow rate in outside lane, VOL	21.00
Effective width of outside lane, We	4.42
Bicycle LOS Score, BLOS	3.74
Bicycle LOS	D
Notes:	
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.	
2. If v1 (vd or vo) > 1,700 pc/h, terminate analysis-the LOS is F.	
3. For the analysis direction only, and for v>200 veh/h.	
4. For the analysis direction only, and for v>200 veh/h.	
5. See Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.	
* These items have been entered or edited to override calculated value	

Passing Lane Analysis									
Total length of analysis segment, L _a									
Length of two-lane highway upstream of the passing lane, L _p									
Length of two-lane highway downstream of the passing lane, L _d									
Average time spent traveling along the passing lane, T _{PL}									
Percent time-spent-following, P _{TSF} (from above)									
Level of service, LOS (from above)									
Average Travel Speed with Passing Lane									
Downstream length of two-lane highway within effective passing lane, L _d									
Length of two-lane highway within effective passing lane, L _d									
Average travel speed, fpl									
Percent free flow speed including passing lane, ATSP _f									
Percent free flow speed including passing lane, PRSP _f									
Percent time-spent-following with Passing Lane									
Downstream length of two-lane highway within effective passing lane, L _d									
Length of two-lane highway downstream of effective length of passing lane for percent time-spent-following, L _d									
Adj. factor for the effect of passing lane on average speed, fpl									
Average travel speed including passing lane, ATSP _f									
Percent free flow speed including passing lane, PRSP _f									
Percent time-spent-following with Passing Lane									
Downstream length of two-lane highway within effective passing lane, L _d									
Length of two-lane highway downstream of effective length of passing lane for percent time-spent-following, L _d									
Adj. factor for the effect of passing lane on percent time-spent-following, fpl									
Percent time-spent-following with Passing Lane									
Percent Time-Spent-Following with Passing Lane									
Downstream length of two-lane highway within effective passing lane, L _d									
Length of two-lane highway downstream of effective length of passing lane for percent time-spent-following, L _d									
Adj. factor for the effect of passing lane on percent time-spent-following, fpl									
Percent time-spent-following with Passing Lane									
Percent Time-Spent-Following									
Input Data									
Highway class									
Shoulder width	2.0	ft	Peak hour factor, PHF	1.00	%				
Lane width	5.0	ft	Trucks and buses	5.0	%				
Shoulder width	1.0	ft	Total general traffic	0.0	mi/hr				
Grade	0.5	%	Recreational vehicles	0.0					
Terrain type	Urban		No-passing zones	100	%				
Grade:	-	mi	Access point density	12	/mi				
Length:	-	mi							
Up/down:	-	%							
Analysis direction volume, V _d	4.09	veh/h							
Opposing direction volume, V _o	4.43	veh/h							
Average Travel Speed									
Analysis(d)									
Opposing (o)									
PCE for trucks, ET									
PCE for RVs, ER									
Heavy-vehicle adj. factor, (note-5) FHV									
Grade(adj.) factor, (note-1) FG									
Directional flow rate, (note-2) vi									
Free-flow speed from field measurement:									
Field measured speed, (note-3) S FM									
Observed total demand, (note-3) V									
Estimated free-flow speed:									
Base free-flow speed, (note-3) BFFS									
For later and shoulder width, (note-3) FLS									
Adj. for access point density, (note-3) FA									
Free-flow speed, FFSd									
Adjustment for no-passing zones, fnp									
Average travel speed, ATSA									
Percent Free Flow Speed, PFFS									
Direction									
Analysis(d)									
Opposing (o)									
PCE for trucks, ET									
PCE for ER, ER									
Heavy-vehicle adjustment factor, FHV									
Grade-adjustment factor, (note-1) FG									
Base percent time-spent-following, (note-4) BPFSD									
Base adjustment for no-passing zones, fnp									
Percent time-spent-following, PFSd									
Level of Service and Other Performance Measures									
Level of service, LOS									
Yield of service, YIELD									
Peak 15-min vehicle-miles of travel, VM15									
Peak 15-min total travel time, TT15									
Capacity from ATS, CDATS									
Capacity from PRSP, CPSP									
Directional capacity									

* These items have been entered or edited to override calculated value
 1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific segments are treated as level terrain.
 2. If v_o (vd or o) > 700 veh/h, terminate analysis-the LOS is F.
 3. For the analysis direction only, if v_o > 700 veh/h, terminate analysis-the LOS is F.
 4. For the analysis direction only, if v_o > 700 veh/h, terminate analysis-the LOS is F.
 5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Directional Two-Lane Highway Segment Analysis	
Analyst	Allison Jarmon
Agency/Co.	CITY OF Fort Bragg
Date Performed	7/1/2015
Analysis Time Period	Weekend MD Peak
H-Gauge	SR 1
From To	0.5 mi N/o & S/o Project Site
jurisdiction	G12 of Fort Bragg
Analysis Year	2015
Description	Existing plus Project SB
Input Data	
Highway class	Class 2
Shoulder width	5.0 ft
Lane width	5.5 ft
Shoulder length	1.0 mi
Terrain type	Urban
Grade:	0.0% Recreational vehicles
Length:	mi % No-passing zones
Up/down:	% Access point density
Analysis direction volume, Vd	4.43 veh/h
Opposing direction volume, Vo	4.09 veh/h
Average Travel Speed	
Direction	Analysis(d)
PCE for trucks, ET	Peak hour factor, PHF 1.00
PCE for RVs, ER	% Trucks and buses 5.0 %
Heavy-vehicle adj. factor, (note-5)	Truck load adjustment 0.0 mi/hr
Grade(d), factor, (note-1)	Recreational vehicles 0.0
Directional flow rate, (note-2) vi	mi/h %
Free-flow speed from field measurement:	Access point density 10 /mi
Field measured speed, (note-3) SF	- veh/h
Estimated total demand, (note-3) V	-
Base free-flow speed, (note-3)	2.0* PCE 1.0
Adj. for lane and shoulder width, (note-3)	BPFSD 0.952
Adj. for access point density, (note-3) FA	1.00
Free-flow speed, FFSd	4.65 PC/h
Adjustment for no-passing zones, fnp	40.8 mi/h
Average travel speed, ATSA	2.6 mi/h
Percent Free Flow Speed, PFFS	31.3 mi/h
Percent time-spent-following, PTFsd	76.7 %
Percent Time-Spent-Following	
Direction	Analysis(d)
PCE for trucks, ET	Opposing (o) 1.0
PCE for RVs, ER	1.0
Heavy-vehicle adj. factor, (note-1)	1.00
Grade(d), factor, (note-1)	1.00
Base free-flow speed, (note-4)	4.13 BPFSD 0.952
Base percent time-spent-following, (note-4)	45.2 %
Adjustment for no-passing zones, fnp	44.1 %
Percent time-spent-following, PTFsd	66.1 %
Level of Service and Other Performance Measures	
Level of service, LOS	0.26
Volume of service, V ₁₀₀	veh-mi
Peak 15-min vehicle-miles of travel, VMT15	111
Peak 15-min total travel time, TRT15	443
Capacity from ATS, C4ATS	3.5
Capacity from PRSP, C4PRSP	0
Directional capacity	1700

Passing Lane Analysis	
Total length of analysis segment, L _a	1.0 mi
Length of two-lane highway upstream of the passing lane, L _u	- mi
Length of passing lane including tapers, fpl	31.3 mi
Average travel speed, fpl (from above)	68.1 mi/h
Percent time-spent-following tapers, fpl (from above)	0.1 %
Average Travel Speed with Passing Lane	
Downstream length of two-lane highway within effective length of passing lane for average travel speed, fpl	- mi
Length of two-lane highway downstream of average travel speed, fpl	- mi
Adj. factor for the effect of passing lane on average speed, fpl	-
Average travel speed including passing lane, ATSP1	-
Percent free flow speed including passing lane, PRSP1	0.0 %
Percent Time-Spent-Following with Passing Lane	
Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, fpl	- mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, fpl	- mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-
Percent time-spent-following, fpl including passing lane, PRSP1	- %
Level of Service and Other Performance Measures with Passing Lane	
Level of service including passing lane, LOS1	A
Peak 15-min total travel time, TRT15	- veh-h
Bicycle Level of Service	
Posted speed limit, Sp	0
Percent of segment with occupied on-highway parking	3
Pavement rating, P	443.0
Flow rate in outside lane, VOL	21.00
Effective width of outside lane, WE	4.42
Bicycle LOS Score, BLOS	3.81
Bicycle LOS	D
Notes:	
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.	
2. If v1 (vd or vo) >> 1,700 pch, terminate analysis-the LOS is F.	
3. For the analysis direction only, and for v>200 veh/h.	
4. For the analysis direction only, and for v>200 veh/h.	
5. Use alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.	
* These items have been entered or edited to override calculated value	

Directional Two-Lane Highway Segment Analysis

		Passing Lane Analysis	
Analyst	Allison Jarmon	Total length of analysis segment, L _a	1.0 mi
Agency/Co.	CITY of Fort Bragg	Length of two-lane highway upstream of the passing lane, L _u	- mi
Date Performed	7/1/2015	Length of passing lane including tapers, f _{pl}	- mi
Analysis Time Period	Weekday PM Peak	Average travel speed, f _{av}	39.5 mi/h
H-Gway	SR 1	Percent time-spent-following from above	0.0
From/To	0.5 mi N/o & S/o Project Site	Level of service, f _{os} (from above)	C
Jurisdiction	CITY of Fort Bragg	Average Travel Speed with Passing Lane	
Analysis Year	2015	Downstream length of two-lane highway within effective length of two-lane highway down for average travel speed, L _d	- mi
Description	Future plus, Project NB	Length of two-lane highway downstream for average travel speed, L _d	- mi
Input Data		Adj. factor for the effect of passing lane on average speed, f _{pl}	-
H-Gway class	Class 2	Average travel speed including passing lane, ATSp ₁	-
Shoulder width	5.0 ft	Percent free flow speed including passing lane, PRSp ₁	0.0 %
Lane width	11.0 ft	Percent time-spent-following with Passing Lane	-
Travel time	1.0 hr	Percent of passing lane within effective length	-
Grade	%	Downstream length of two-lane highway within effective length of two-lane highway downstream for percent time-spent-following, L _d	- mi
Length	mi	Length of passing lane for percent time-spent-following, L _d	- mi
Up/down	- %	Adj. factor for the effect of passing lane on percent time-spent-following, f _{pl}	-
Analysis direction volume, Vd	454	Percent time-spent-following	-
Opposing direction volume, Vo	470	Including passing lane, PRSp ₁	- %
Average Travel Speed		Level of Service and Other Performance Measures with Passing Lane	
Direction		Level of service including passing lane, LOS ₁	A
PCE for trucks, ET	Analyze(d)	Peak 15-min total travel time, TT ₁₅	-
PCE for RVs, ER	2.0*	A	veh-h
Heavy-vehicle adj. factor, (note-5)	1.0	Peak 15-min total travel time, TT ₁₅	-
Grade adj. factor, (note-1)	0.952	Bicycle Level of Service	
Directional flow rate, (note-1)	F _g	Posted speed limit, Sp	45
Adj. for access point density, (note-2)	1.00	Percent of segment with occupied on-highway parking	0
Free-flow speed from Field Measurement:	477 pc/h	Pavement rating, P	3
Field measured speed, (note-3) S FM	49.4 pc/h	Flow rate in outside lane, VOL	454.0
Observed total demand, (note-3) V	-	Effective width of outside lane, We	21.00
Estimated Free-flow Speed:		Effective speed factor, St	4.42
Base free-flow speed, (note-3) BFFS	45.0 mi/h	Bicycle LOS Score, BLOS	3.78
Adj. for lane and shoulder width, (note-3) f _{LS}	3.0 mi/h	D	
Adj. for access point density, (note-3) FA	3.0 mi/h		
Free-flow speed, FFSd	40.3 mi/h		
Adjustment for no-passing zones, f _{np}	2.3 mi/h		
Average travel speed, ATSp ₁	30.5 mi/h		
Percent Free Flow Speed, PFFS	75.7 %		
Percent Time-Spent-Following		Level of Service, LOS	C
Direction		Volume to capacity ratio, v/c	0.27
PCE for trucks, ET	Analyze(d)	Peak 15-min total travel time, TT ₁₅	1.4 veh-mi
PCE for RVs, ER	1.0	Peak 15-min total travel time, TT ₁₅	45.4 veh-mi
Heavy-vehicle adjustment factor, f _{hv}	1.00	Capacity from ATSp ₁ , CATS	3.7 veh-h
Directional flow rate, (note-2) V ₁	f _g	Capacity from PRSp ₁ , CATS	168.3 veh/h
Base percent time-spent-following, (note-4) BPTSF _d	48.1 %	Directional Capacity	1700 veh/h
Adjustment for no-passing zones, f _{np}	62.5 %		
Percent time-spent-following, PRSp ₁	65.0 %		
Level of Service and Other Performance Measures		* These items have been entered or edited to override calculated value	
Level of service, LOS			
Volume to capacity ratio, v/c			
Peak 15-min total travel time, TT ₁₅			
Peak 15-min total travel time, TT ₁₅			
Capacity from ATSp ₁ , CATS			
Capacity from PRSp ₁ , CATS			
Directional Capacity			

Passing Lane Analysis

Directional Two-Lane Highway Segment Analysis

Analyst	Allison Jaronin	Total length of analysis segment, L _a	1.0	mi
Agency/Co.	CITY of Fort Bragg	Length of two-lane highway upstream of the passing lane, L _p	-	mi
Date	7/1/2015	Length of two-lane highway downstream of the passing lane, L _d	-	mi/h
Analysis Time Period	Weekday PM Peak	Average travel speed, f _{sp} , for level terrain, m/s	20.5	mi/h
Hwy	SR 1	Percent time-spent-following, P _{FSF} (from above)	69.0	
From/To	0.5 mi N/o & S/o Project Site	Level of service, LOS (from above)	C	
Jurisdiction	CITY of Fort Bragg	Average Travel Speed with Passing Lane		
Analysis Year	2015			
Description	Future plus Project NB			
Input Data				
Hwy/way class	Class 2	Peak hour factor, PHF	1.00	%
Shoulder width	5.0 ft	% Trucks and busses	5	%
Lane width	11.0 ft	% Trucks crawling	0.0	%/mi/hr
Segment length	mi	% Truck and bus speed limit	2.0	%
Traveler Level	Level	% Box car and semi-trucks	2.0	%
Grade:		% Other vehicles	100	%
Length	Up/down	No passing zones	12	/mi
Analysis direction volume, Vd	454	Access point density	12	
Opposing direction volume, Vo	470	veh/h		
Average Travel Speed		veh/h		
Direction	Analyze(s,d)	Opposing (o)		%
PES for trucks, ET	2.0*	2.0*		
PES for RVs, ER	1.0	1.0		
Heavy-vehicle adj. factor, (note-5)	0.952	0.952		
Grade adj. factor, (note-1) fg	1.00	1.00		
Directional flow rate, (note-2) vi	477	494	pc/h	
Free-flow Speed from Field Measurement:				
Field measured speed, (note-3) S FM	"	"	mi/h	
Observed total demand, (note-3) V	"	"	veh/h	
Estimated Free-flow Speed:				
Base free-flow speed, (note-3) BFFS	45.0	45.0	mi/h	
Adj. for lane and shoulder width, (note-3) fLS	1.0	1.0	mi/h	
Adj. for access point density, (note-3) FA	3.0	3.0	mi/h	
Free-flow speed, FFSd	40.3	40.3	mi/h	
Adjustment for no-passing zones, fnp	3.0	3.0	mi/h	
Average travel speed, ATSA	30.5	30.5	mi/h	
Percent Free Flow Speed, PFFS	75.5	75.5	mi/h	
Percent Time Spent-Following	Analyze(s,d)	Opposing (o)		
Direction	1.0	1.0		
PES for trucks, ET	1.0	1.0		
PES for RVs, ER	1.00	1.00		
Heavy-vehicle adjustment factor, fHV	1.00	1.00		
Grade adjustment factor, (note-1) fg	0.954	0.954	pc/h	
Directional flow rate, (note-2) vi	454	454	pc/h	
Base free-flow speed, (note-3) BFFS	45.1	45.1	pc/h	
Adjustment for no-passing zones, fnp	42.5	42.5	pc/h	
Percent time-spent-following, PFSd	65.0	65.0	mi/h	
Level of Service and Other Performance Measures				
Level of service, LOS	C			
Volume capacity ratio, v/c	0.27			
Peak-hour vehicle-miles of travel, VMH15	45.4	veh.mi		
Peak 15-min total travel time, TM15	3.7	veh.mi		
Capacity from MTS, CATS	1683	1700	veh/h	
Capacity from PRSP, CDPRSP				
Directional capacity				

Downstream length of two-lane highway within effective length of the passing lane for average travel speed, L_d

Length of the passing lane for average travel speed, L_d

Adj. factor for the effect of passing lane on average speed, f_{psp}

Average travel speed including passing lane, ATSP₁

Percent free flow speed including passing lane, PRSP₁

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of the passing lane for percent time-spent-following, L_d

Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, L_d

Adj. factor for the effect of passing lane on percent time-spent-following, f_{psp}

Percent time-spent-following, PRSP₁

Including passing lane, PRSP₁

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOS₁

Peak 15-min total travel time, TM₁₅

Bicycle Level of Service

Posted speed limit, Sp

Percent of segment with occupied on-highway parking

Pavement rating, P

Flow rate in outside lane, VOL

veh-h

Effective width of outside lane, we

Effective speed factor, St

4.42

Bicycle LOS Score, BLOS

3.78

Bicycle LOS

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain

is one of the base conditions. For the purpose of grade adjustment, specific

congrade segments are treated as level terrain.

2. If v_d (vd or v_d) > 700 pc/h, terminate analysis-the LOS is F.

3. For the analysis direction only, and for v>400 veh/h.

4. For the analysis direction only, and for v>400 veh/h.

5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a

specific downgrade.

* These items have been entered or edited to override calculated value

Directional Two-Lane Highway Segment Analysis

Analyst	Allison Jarmon	Total length of analysis segment, L _t	1.0 mi
Agency/Co.	CITY of Fort Bragg	Length of two-lane highway upstream of the passing lane, L _u	- mi
Date	7/1/2015	Length of passing lane including tapers, f _{pl}	30.6 mi
Analysis Time Period	Weekend MD Peak	Average travel speed, f _{pl} (from above)	22.7 mi/h
H-Gway	SR 1	Percent time spent following from above)	
From/To	0.5 mi N/o & S/o Project Site	Level of service, f _{od} (from above)	
Jurisdiction	CITY of Fort Bragg		
Analysis Year	2015		
Description	Future plus, Project SB		
<u>Input Data</u>			
H-Gway class	Class 2	Peak hour factor, PHF	1.00
Shoulder width	5.0 ft	% Trucks and busses	5 %
Lane width	11.0 ft	% Trucks crawling	0.0 %
Travel time	1.0 hr	% Trucks at a standstill	0.0 %
Grade	0.0% mi	% Trucks at a standstill	2.0 %
Length	- mi	% No passing zones	100 %
Up/down	- %	Access point density	10 /mi
Analysis direction volume, Vd	504 veh/h	Opposing direction volume, Vo	469 veh/h
Opposing direction volume, V _o			
<u>Average Travel Speed</u>			
Direction	Analyze(d)	Opposing (o)	
PCE for trucks, ET	2.0*	2.0*	
PCE for RVs, ER	1.0	1.0	
Heavy-vehicle adj. factor, (note-5)	0.952	0.952	
Grade adj. factor, (note-1)	fg	1.00	
Directional flow rate, (note-1)	fg	529 pc/h	
Free-flow Speed from Field Measurement:		493 pc/h	
Field measured speed, (note-3) SFM	"		
Observed total demand, (note-3) V	"	mi/h	
Estimated free-flow speed:		veh/h	
Base free-flow speed, (note-3) BFFS	45.0	45.0	
Adj. for lane and shoulder width, (note-3) fLS	45.0	mi/h	
Adj. for access point density, (note-3) FA	2.5	mi/h	
Free-flow speed, FFSd	40.8	mi/h	
Adjustment for no-passing zones, fnp	2.3	mi/h	
Average travel speed, ATSS	30.6	mi/h	
Percent Free Flow Speed, PFFS	75.0 %		
<u>Percent Time-Spent-Following</u>			
Direction	Analyze(d)	Opposing (o)	
PCE for trucks, ET	1.0	1.0	
PCE for RVs, ER	1.0	1.000	
Heavy-vehicle adjustment factor, FHV	fg	1.000	
Grade adjustment factor, (note-1) fg	1.00	1.000	
Directional flow rate (note-2) V _d	504	504	
Base percent time-spent-following, (note-4) BPTSFd	51.6 %	51.6 %	
Adjustment for no-passing zones, fnp	40.8 %	40.8 %	
Percent time spent following, PPTSFd	72.7 %	72.7 %	
<u>Level of Service and Other Performance Measures</u>			
Level of service, LOS	D		
Volume to capacity ratio, v/c	0.30		
Peak battelle miles of travel, MBM	1.6	veh-mi	
Peak battelle miles of travel, MBM	1.4	veh-mi	
Peak 15 min total travel time, TT15	4.1	veh-h	
Capacity from ATSS, CATS	0	veh/h	
Capacity from PFFS, CDPFFS	1700	veh/h	
Directional Capacity			

<u>Passing Lane Analysis</u>			
Total length of analysis segment, L _t	1.0 mi	Length of two-lane highway upstream of the passing lane, L _u	- mi
Length of passing lane including tapers, f _{pl}	- mi	Average travel speed, f _{pl} (from above)	30.6 mi
Percent time spent following from above)		Level of service, f _{od} (from above)	22.7 mi/h
<u>Average Travel Speed with Passing Lane</u>			
Downstream length of two-lane highway within effective length of passing lane for average travel speed, Ld	- mi	Length of two-lane highway downstream for average travel speed, Ld	- mi
Length of two-lane highway down effective length of passing lane for the effect of passing lane speed, f _{pl}	- mi	Adj. factor for the effect of passing lane speed, f _{pl}	-
Average travel speed including passing lane, ATSP ₁	-	Average travel speed including passing lane, ATSP ₁	-
Percent free flow speed including passing lane, PFFSP ₁	0.0 %	Percent free flow speed including passing lane, PFFSP ₁	-
Percent time spent following with Passing Lane	-		
<u>Percent time spent within effective length of passing lane</u>			
Downstream length of two-lane highway within effective length of passing lane for percent time spent following, Ld	- mi	Length of two-lane highway downstream of effective length of passing lane for percent time spent following, Ld	- mi
Length of two-lane highway downstream of effective length of passing lane for percent time spent following, Ld	- mi	Adj. factor for percent time spent following, Ld	-
Percent time spent following, f _{pl}	-	Percent time spent following, f _{pl}	-
Including passing lane, PFFSP ₁	-	Including passing lane, PFFSP ₁	- %
<u>Level of Service and Other Performance Measures with Passing Lane</u>			
Level of service including passing lane, LOS ₁	A	Peak 15-min total travel time, TT15	-
Bicycle Level of Service			
Posted speed limit, Sp	45		
Percent of segment with occupied on-highway parking	0		
Pavement rating, P	3		
Flow rate in outside lane, VOL	504.0		
Effective width of outside lane, We	21.0		
Effective speed factor, St	4.42		
Bicycle LOS Score, BLOS	3.83		
Bicycle LOS	D		
Notes:			
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.			
2. If v ₁ (vd or vo) > 1,700 pc/h, terminate analysis-the LOS is F.			
3. For the analysis direction only, and for v>200 pc/h.			
4. For the analysis direction only, and for v>200 pc/h.			
5. See Alternative Exhibit 15-4 if some trucks operate at crawl speeds on a specific downgrade.			
* These items have been entered or edited to override calculated value			

Appendix D

Turn Lane Warrants

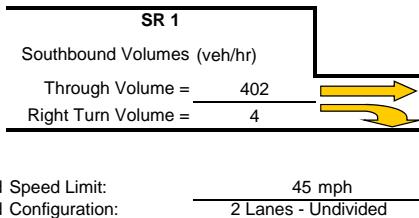
DRAFT

Turn Lane Warrant Analysis - Tee Intersections

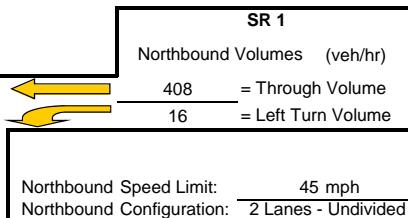
Study Intersection: SR 1 and The Avalon Driveway

Study Scenario: Weekday PM Peak Period -- Existing plus Project Volumes

Direction of Analysis Street: North/South



Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	406
If AV<Va then warrant is met		

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	406
If AV<Va then warrant is met		

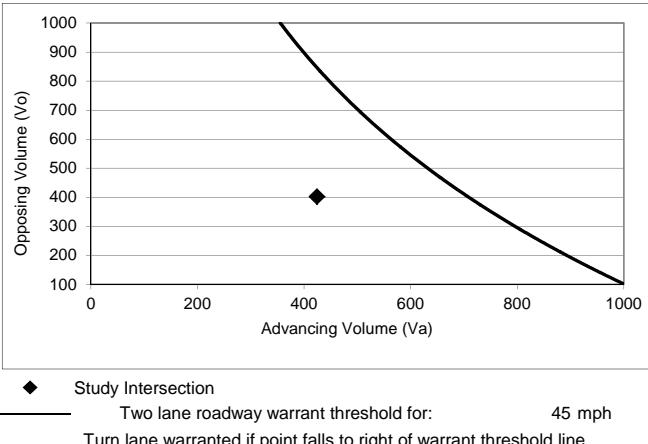
Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns % 3.8 %

Advancing Volume Threshold AV 707 veh/hr

If AV<Va then warrant is met



Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

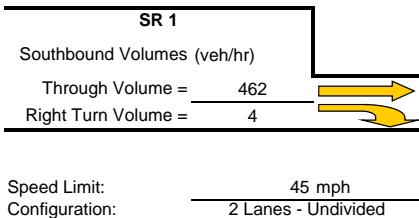
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

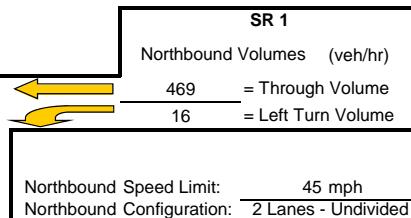
Study Intersection: SR 1 and The Avalon Driveway

Study Scenario: Weekday PM Peak Period -- Future plus Project Volumes

Direction of Analysis Street: North/South



Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	466.3
If AV<Va then warrant is met		

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	466.3
If AV<Va then warrant is met		

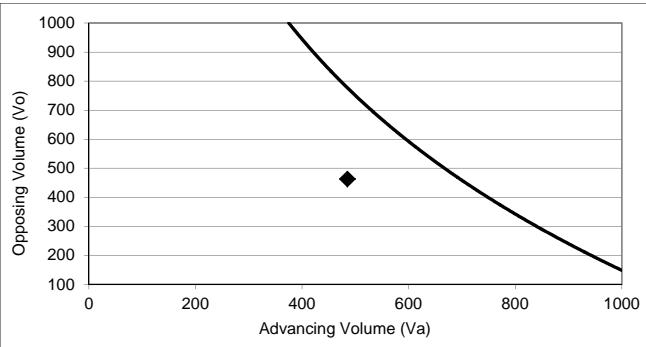
Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns % 3.3 %

Advancing Volume Threshold AV 697 veh/hr

If AV<Va then warrant is met



Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

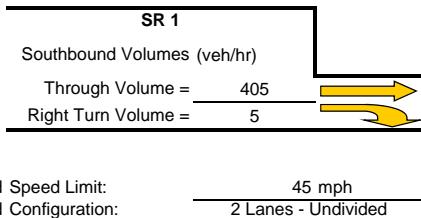
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

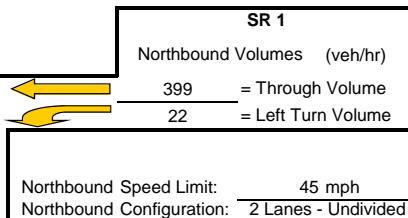
Study Intersection: SR 1 and The Avalon Driveway

Study Scenario: Saturday Midday Peak Period -- Existing plus Project Volumes

Direction of Analysis Street: North/South



Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	410
If AV<Va then warrant is met		

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	410
If AV<Va then warrant is met		

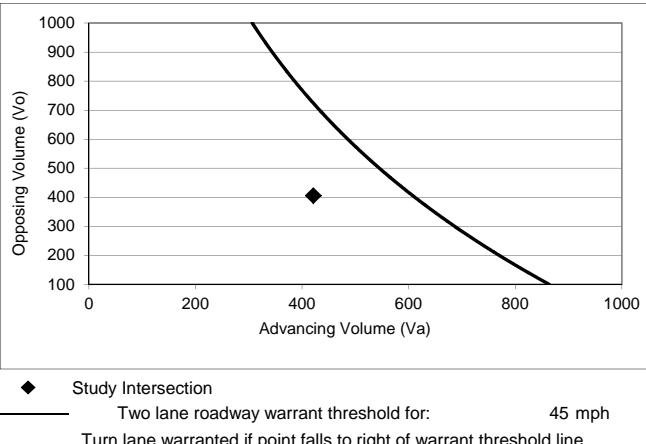
Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns % 5.2 %

Advancing Volume Threshold AV 608 veh/hr

If AV<Va then warrant is met



Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

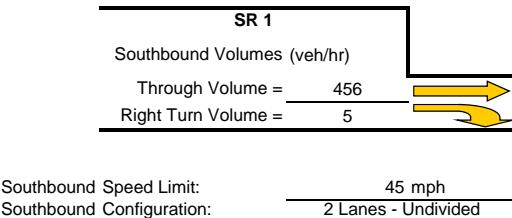
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

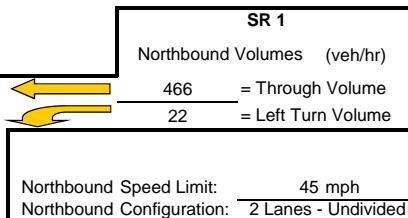
Study Intersection: SR 1 and The Avalon Driveway

Study Scenario: Saturday Midday Peak Period -- Future plus Project Volumes

Direction of Analysis Street: North/South



Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	461
If AV<Va then warrant is met		

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	461
If AV<Va then warrant is met		

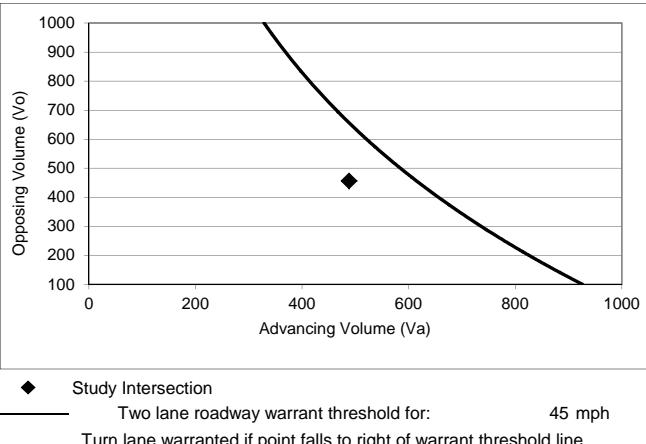
Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns % 4.5 %

Advancing Volume Threshold AV 615 veh/hr

If AV<Va then warrant is met



Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.