APPENDIX G – TRANSPORTATION AND CIRCULATION

Higgins Associates (now Hatch Mott MacDonald). *Traffic Impact Analysis*. October 2010.

FERRINI RANCH SUBDIVISION

TORO PLANNING AREA
MONTEREY COUNTY, CALIFORNIA

TRAFFIC IMPACT ANALYSIS

Draft Report

Prepared For

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1 INTRODUCTION

This Traffic Impact Analysis (TIA) was commissioned to evaluate the potential traffic impacts associated with the implementation of the proposed Ferrini Ranch Subdivision residential development along the State Route 68 corridor in the Toro Planning Area of Monterey County, California.

1.1 Project Description

The proposed project would be located approximately six miles southwest of the City of Salinas. The project site is located on 870 acres between River Road and San Benancio Road. The project would consist of 212 residential units including 146 market-rate lots, 23 market-rate clustered housing units, and 43 inclusionary housing units. The proposed project also includes a winery and wine-tasting facility with associated production, storage and office facilities. The winery component of the project would be located off of River Road. Approximately 600 acres of the project site would be permanently dedicated as open space. A portion of Toro Regional Park divides the project site in two. State Route 68 would provide regional access to the project site, with access points located at the State Route 68 / Portola Drive (Toro Park) interchange, River Road and San Benancio Road. The vast majority of the residential units (approximately 90%) would only have access from the State Route 68 / Portola Drive (Toro Park) interchange. The location of the proposed project is shown in Exhibit 1A and the project site plan is shown in Exhibits 1B West and 1B East. The project description is summarized in Table 1.

Table 1. Project Description

	Project Access Location	Land Use	Size
1	San Benancio / Paseo de Vaqueros	Residential	12 Units
2	Toro Park West	Residential	125 Units
3	Toro Park East	Residential	67 Units
4	River Terrace Dr. / River Road	Residential	8 Units
	Total		**212**
5	River Terrace Dr. / River Road	Winery	85,000 SF
6	River Terrace Dr. / River Road	Office	25,000 SF
	Total		**110,000 SF**

1.2 Alternative Project Site Plan Description

The project applicant is also considering an alternative project site plan. The alternative project site plan includes a smaller version of the winery component of the project and a redistribution of some of the residential units. The alternative project would consist of 212 residential units including 170 market-rate lots and 42 inclusionary units (33 of which are townhouses and/or duplexes, and 9 of which are small-lot detached housing units). In addition, the alternative project site plan could include an alternate project

entrance from a new intersection on SR 68. With the alternate project access, Torero Drive would be realigned and would intersect SR 68 approximately 850 feet west of the existing Torero Drive. Access to the project would be via the fourth (south) leg of the new intersection. The existing Torero Drive would be closed at SR 68 and existing traffic at the Torero Drive / SR 68 intersection would be diverted either to the new intersection or to the existing Portola Drive interchange. The alternative project site plan is shown in Exhibits 1C West and 1C East. The alternative project description is summarized in Table 2.

Table 2. Alternative Project Site Plan Project Description

	Project Access Location	Land Use	Size
1	San Benancio / Paseo de Vaqueros	Residential	1 Unit
2	Toro Park West	Residential	149 Units
3	Toro Park East	Residential	43Units
4	River Terrace Dr. / River Road	Residential	19 Units
	Total		**212**
5	River Terrace Dr. / River Road	Winery	23,500 SF
6	River Terrace Dr. / River Road	Office	5,000 SF
	Total		**28,500**

1.3 Alternate Project Access

The alternate project access (i.e., realigned Torero Drive / SR 68 intersection) was analyzed under Alternative Project Site Plan conditions with five options for intersection geometrics and traffic controls that include various combinations of signalization methods and turning movement restrictions. A summary of the five options is shown in Table 3. Schematic sketches of each option are shown in Exhibit 1D.

Table 3. Alternate Project Access Geometric and Traffic Control Options

Option	Description
1	Full Access Signalized Intersection – Allow all movements
2	Allow eastbound & westbound SR 68 lefts and rights and northbound & southbound rights from side streets. Prohibit northbound and southbound lefts and through movements – No Signal.
3	Allow eastbound & westbound SR 68 lefts and rights and northbound & southbound rights from side streets. Prohibit northbound and southbound lefts and through movements – With Signal.
4	Allow eastbound SR 68 rights and westbound SR 68 lefts and rights, and northbound and southbound rights from side streets. Prohibit northbound and southbound lefts and through movements and eastbound lefts – No Signal.
5	Allow eastbound SR 68 rights and westbound SR 68 lefts and rights, and northbound and southbound rights from side streets. Prohibit northbound and southbound lefts and through movements and eastbound lefts – With Signal.

1.4 Scope of Work

The study area and scope of work were evaluated by Caltrans and County of Monterey Department of Public Works staff and deemed adequate. This traffic study analyzed the anticipated project traffic impacts on the local roadways and intersections. Study intersections were analyzed for the weekday morning (i.e., 7:00 to 9:00 a.m.) and evening (i.e., 4:00 to 6:00 p.m.) peak periods. Recommendations for mitigation measures to offset project impacts are also provided. Exhibit 2 shows the extent of the study area. The following intersections and road segments were included in the analysis:

Intersections:

1. Josselyn Canyon Road / SR 68
2. Olmsted Road / SR 68
3. SR 218 / SR 68
4. Ragsdale Drive / SR 68
5. York Road / SR 68
6. Pasadera Drive-Boots Road / SR 68
7. Laureles Grade / SR 68
8. Corral de Tierra Road / SR 68
9. San Benancio Road / SR 68
10. San Benancio Road / Paseo de Vaqueros
11. Torero Drive / SR 68
12. Portola Drive / SR 68 Eastbound Ramps
13. Portola Drive / SR 68 Westbound Ramps
14. SR 68 Eastbound Ramps / River Road
15. SR 68 Westbound Ramps / Reservation Road
16. SR 68 Westbound Ramps / Spreckels Boulevard
17. SR 68 Eastbound Offramp / Spreckels Boulevard
18. SR 68 Eastbound Onramp / Spreckels Boulevard
19. SR 68 / Blanco Road
20. Davis Road / Reservation Road
21. Davis Road / Blanco Road
22. River Terrace Drive / River Road (future intersection)

Road Segments:

1. SR 68 between Josselyn Canyon Road and Olmsted Road
2. SR 68 between Olmsted Road and SR 218
3. SR 68 between SR 218 and Ragsdale Drive
4. SR 68 between Ragsdale Drive and York Road
5. SR 68 between York Road and Pasadera Drive
6. SR 68 between Pasadera Drive and Laureles Grade Road
7. SR 68 between Laureles Grade Road and Corral de Tierra Road
8. SR 68 between Corral de Tierra Road and San Benancio Road
9. SR 68 between San Benancio Road and Torero Drive
10. SR 68 between Torero Drive and Begin/End Freeway

11. SR 68 between Begin/End Freeway and Portola Drive
12. SR 68 between Portola Drive and Reservation Road
13. SR 68 between Reservation Road and Spreckels Boulevard
14. SR 68 between Spreckels Boulevard and Blanco Road
15. SR 218 between SR 68 and General Jim Moore Boulevard
16. Reservation Road between SR 68 and Davis Road
17. Davis Road between Reservation Road and Blanco Road

The study analyzed traffic conditions under the following development scenarios:

- Existing Conditions
- Background Conditions
- Background + Project Conditions
- Background + Alternative Project Site Plan Conditions
- Cumulative + Project Conditions

1.5 Intersection Traffic Operation Evaluation Methodologies

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept. Quantitative Level of Service (LOS) analyses were performed for the study intersections based on the *2000 Highway Capacity Manual* methodologies using the Synchro analysis software. LOS is a quantitative description of an intersection's operation, ranging from LOS A to LOS F. Level of service A represents free flow un-congested traffic conditions. Level of service F represents highly congested traffic conditions with unacceptable delay to vehicles at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes. *Appendices A1, A2 and A3* provide LOS descriptions for signalized intersections, unsignalized intersections with two-way stop control and unsignalized intersections with all-way stop control, respectively.

A saturation flow rate of 1600 vehicles per lane per hour was used for the eastbound through and westbound through movements along SR 68 at the request of Caltrans District 5 staff.

1.6 Road Segment Traffic Operation Evaluation Methodologies

Various portions along the State Route 68 corridor fall into different functional road classification categories within the study area. These categories include 2-lane arterial, 2-lane highway, 4-lane freeway, and multi-lane highway.

Road segment traffic operations along the two-lane portion of the SR 68 corridor have been a topic of discussion for a very long time. Two commonly accepted methods used to evaluate the operations of road segments include the Highway Capacity Manual's Arterial and Two-Lane Two-Way Highway methodologies.

The two-lane portion of SR 68 between Josselyn Canyon Road and San Benancio Road can be considered a Class I two-lane highway, but there are also a number of signalized intersections located along the study route, which could classify it as a 2-lane arterial. Although all methodologies previously used to evaluate road segments were based on the Level of Service (LOS) concept, different methodologies produced different results.

For example, the Synchro software allows the analysis of arterials based on the Highway Capacity Manual's (HCM) arterial analysis methodology. The results of the HCM's arterial analysis are strongly influenced by the operations of the signalized intersections along the corridor, and in this case yielded results that were significantly better than what is actually perceived by the motoring public.

The HCS software allows the analysis of two-lane highways based on methodologies also included in the Highway Capacity Manual. This analysis is based on traffic volumes, road capacity, and the percent-time-spent-following for a two-lane highway. For this study, it was also found that the use of this software did not accurately reflect the actual conditions in the field for the two-lane portion of SR 68.

It could be argued that, for much of the study area, SR 68 is a hybrid between a two-lane highway and a signalized arterial. Due to the unique characteristics of SR 68, and based on discussions with Monterey County and Caltrans staff, it was decided that an alternative method for analyzing the 2-lane portion of the SR 68 corridor (from Josselyn Canyon Road to San Benancio Road) would be appropriate.

GPS (Geographical Positioning System) and GIS (Geographical Information System)-based technology provides a way to evaluate road segments and corridors based on actual conditions that are experienced in the field. The method involves the use of a test vehicle equipped with a global positioning device. As the test vehicle travels along the study corridor, the GPS device records the position of the test vehicle in one-second intervals. The collected data can then be used to determine the travel speed, travel time, and delays along the corridor.

In this traffic study, the latest GPS and GIS-based technology was used to perform quantitative level of service analyses for eight of the seventeen study road segments (extending on SR 68 from Josselyn Canyon Road to San Benancio Road). The GPS approach to determine travel speed, travel time, and delay along SR 68 provided a more accurate depiction of the existing traffic operations along SR 68 than the other methodologies previously mentioned.

The data obtained from the GPS-equipped test vehicle under existing traffic conditions was used to calibrate the Synchro traffic analysis software by inputting actual field-measured delay at each intersection and along the highway in order to assess the road segment operations under the projected traffic conditions (background, background plus project and cumulative).

The HCS software, based on methodologies included in the Highway Capacity Manual, was used for the analysis of three of the study road segments on SR 68 (from San Benancio Road to Torero Drive, from Torero Drive to the freeway portion, and from Spreckels Boulevard to Blanco Road). The HCS software was also used to analyze the study road segments on SR 218, Reservation Road, and Davis Road.

The operational analysis of the three study freeway segments on SR 68 (from west of the Portola Drive interchange to the Portola Drive interchange, from the Portola Drive interchange to the Reservation Road / River Road interchange, and from the Reservation Road / River Road interchange to the Spreckels Boulevard interchange) was based on the 2000 HCM methodologies, which uses vehicle density as the criteria for rating level of service. Vehicle density is defined as the number of passenger cars per mile per lane and is the ratio of the traffic volume on a freeway segment over a one-hour period, divided by the product of the number of lanes on the segment and the travel speed.

1.7 Level of Service Standards

Most of the study intersections and road segments are located along State Route 68. State Route 68 falls under the jurisdiction of Caltrans, therefore the Caltrans level of service standard of the transition between LOS C and LOS D was applied to the study intersections and road segments under Caltrans jurisdiction.

The Monterey County LOS C standard was applied to the study intersections and road segments under the jurisdiction of Monterey County.

1.8 Modeling of Right Turn on Red (RTOR)

All of the signalized study intersections allow right turns on red (RTOR), and these right turns can have an effect on the intersection LOS calculations. There are several options to model right turns on red with different traffic analysis software packages, but the only method prescribed by the HCM for modeling RTOR is to reduce the input volumes to account for vehicles turning right on red. Where an exclusive right turn lane movement runs concurrent with a protected left turn phase from the cross street, the HCM allows for the right turn volume to be reduced by the number of shadowed left turners. However, the length of the right turn lane affects the number vehicles that are able to turn right on red. This is because a short right turn lane can result in right turning vehicles being trapped in the queue with vehicles in the through lane. Due to the already-congested conditions on SR 68, it was assumed that no vehicles would be able to turn right on red at the study intersections on SR 68 between Josselyn Canyon Road and San Benancio Road.

1.9 Criteria for Significant Project Impact

In accordance with the California Environmental Quality Act (CEQA) and agency and professional standards, specific impact criteria have been applied to this study intersections and roadway segments to determine if a significant impact would occur due to the implementation of the proposed project.

Based upon Monterey County Public Works Policy and professional standards, generally a significant impact at a **signalized study intersection** is defined to occur under the following conditions:

- The addition of project traffic causes operations to deteriorate from an acceptable level of service (LOS A, B or C) to an unacceptable level of service (LOS D, E or F).
- For intersections already operating at LOS D and E, a significant impact would occur if a project adds 0.01 or more during peak hours to the critical movement's volume-to-capacity ratio.
- For intersections already operating at LOS F, any increase (one vehicle) to the intersection's critical movement is considered significant.

A significant impact at an **unsignalized study intersection** is defined to occur under the following conditions:

- The addition of project traffic causes any traffic movement to operate at LOS F, or any traffic signal warrant to be met.

A significant impact on a **study roadway segment** is defined to occur under the following conditions:

- The addition of project traffic causes a roadway segment operating at LOS A through LOS E to degrade to a lower level of service D, E or F, or
- The addition of one project trip is added to a segment already operating at LOS F.

1.10 Previously Recommended Improvements along SR 68 Corridor

Certain segments along the SR 68 corridor currently operate below the LOS C/D standard established by Caltrans. Specific recommended improvements would enhance the level of operation at the study intersections to an acceptable level of service. Although the implementation of improvements at the intersections would not necessarily have an effect on the levels of service of the SR 68 road segments, it would facilitate a slight improvement in traffic operations by achieving a slight reduction in delay and travel time along the corridor.

In order to achieve acceptable levels of service for the SR 68 study road segments, the roadway would require widening to four lanes between Toro Park and State Route 1. Alternatively, a four-lane freeway parallel to the SR 68 corridor was considered as part of the Fort Ord Reuse Plan. The County of Monterey and Caltrans are in consideration of the South Fort Ord Bypass along an alignment approximately one-half mile north of the existing SR 68 roadway. However, there are no short or long-term funding sources available for either one of these alternatives.

Furthermore, there are no feasible interim improvements that could be implemented along the corridor that would achieve and maintain the acceptable level of service standards for the entire corridor (i.e., funding is not available to widen the entire corridor to a four-lane facility).

In 2001, the State Route 68 Improvement Advisory Committee (sponsored by the County of Monterey) identified and prioritized a list of improvements for existing and future traffic conditions that would facilitate a slight reduction in the travel time along the corridor. The recommended SR 68 improvements are summarized in Table 4.

The projects on the SR 68 Improvement Advisory Committee list were previously identified in the 1999 *State Route 68 Corridor Study* that was prepared by TAMC. The 1999 study also identified an improvement that was not included on the SR 68 Improvement Advisory Committee final list of improvements. That improvement was to widen SR 68 to four lanes east of San Benancio Road.

Subsequent to the 2001 SR 68 Improvement Advisory Committee recommendations, the Transportation Agency for Monterey County (TAMC) prepared the *Nexus Study for a Regional Development Impact Fee* dated May 14, 2004. Items 2, 4a, 6, and 8 in Table 4 were included in the TAMC 2004 Nexus Study in 2004.

In March 2008 TAMC completed an update to the 2004 *Nexus Study*. In the 2008 updated *Nexus Study* items 2, 4a, 6, and 8 from Table 4 were replaced by "SR-68 Commuter Improvements", which is described as widening SR 68 from the existing 4-lane section adjacent to Toro Park west to Corral de Tierra Road.

TAMC and its member jurisdictions adopted the county-wide, regional impact fee that will cover the costs for studies and construction of many improvements throughout Monterey County. This impact fee, which went into effect on August 27, 2008, will be applied to all new development within Monterey County. The governing document for the fee is the *Regional Impact Fee Nexus Study Update* (March 26, 2008) prepared by Kimley-Horn Associates, Inc.

Apart from the improvements listed in Table 4, a number of other minor improvements were also recommended in several other traffic impact study reports for proposed developments along the SR 68 corridor. The following additional improvements for the SR 68 corridor were also previously recommended:

1. Re-striping of the San Benancio Road northbound and southbound approaches at the SR 68 / San Benancio Road intersection to provide a left-turn/through lane and a right-turn lane on both approaches.

2. Install a right-turn overlap phase at the traffic signal on the northbound approach of the SR 68 / San Benancio Road intersection.

3. Install a right-turn overlap phase at the traffic signal on the northbound approach of the SR 68/ Corral de Tierra Road intersection.

4. Install a right-turn overlap phase on the traffic signal on the southbound approach of the SR 68/SR 218 intersection.

Table 4. SR 68 Traffic Improvements Identified by the Advisory Committee

Priority	Project	Estimated Cost (2001 Dollars)	Status
1	Install Opticom emergency vehicle preemption at the signal controlled intersections	$110,000	Completed
2	Dual left-turn lanes on westbound SR 68 at the Laureles Grade Road intersection	$1,360,000	Completed
3	Provide improved access onto SR 68 from Torero Drive	Caltrans budget item	Completed
4a (tie)	Dual left-turn lanes on westbound SR 68 at the intersection of Corral de Tierra Road	$755,000	In environmental review and design phase.
4b (tie)	Continuously maintain the existing shoulder along SR 68 for safety reasons	Caltrans budget item	Ongoing
6	Extend the eastbound right turn lane at Laureles Grade Road	$500,000	Completed.
7	Widen SR 68 to four lanes from State Route 218 to Ragsdale Drive	$1,626,351	Completed
8	Dual left-turn lanes on westbound SR 68 at the intersection with San Benancio Road	$2,852,000	EIR completed. In final design phase. Scheduled for construction in 2010.
9	South Fort Ord Bypass (Torero Drive to State Route 218)	$179,000,000	This project is included in the regional transportation plan as an unconstrained project. No funding has been identified for this improvement in the foreseeable future (20 years).

Source: County of Monterey Public Works Department, April, 2008.

1.11 Assumed Roadway Improvements

Discussions with County of Monterey and Caltrans District 5 staff have indicated that the following intersection improvements will be implemented within 1 to 5 years. Therefore, these improvements were assumed to be completed under the Background Traffic Conditions scenario.

1. York Road / SR 68 Intersection
    a. The addition of a fourth (south) York Road leg (to be implemented by the Monterra Ranch development).
    b. A second York Road southbound left-turn lane and eastbound acceleration lane (to be implemented by the Laguna Villas Condominium development).

2. Laureles Grade Road / SR 68 Intersection
    a. A second SR 68 westbound left-turn lane (SR 68 Advisory Committee Priority 2).
    b. Extension of the eastbound right-turn lane (SR 68 Advisory Committee Priority 6).

3. Corral de Tierra Road / SR 68 Intersection
    a. The addition of a fourth (north) Corral de Tierra Road leg (to be implemented by the Cypress Church access modification).
    b. A second SR 68 westbound left-turn lane (SR 68 Advisory Committee Priority 4a).

4. San Benancio Road / SR 68 Intersection
    a. A second SR 68 westbound left-turn lane (SR 68 Advisory Committee Priority 8).

2 EXISTING TRAFFIC CONDITIONS

This chapter provides a description of existing traffic conditions in terms of roadway facilities, bicycle and pedestrian facilities, transit service, traffic volumes, and intersection and roadway operations.

2.1 Existing Traffic Network

State Route 68 will provide regional access to the project site. Local access to the project will be via San Benancio Road, the Portola Drive interchange, and River Road.

The study area, shown in Exhibit 2, stretches from the SR 68 / Josselyn Canyon Road intersection in the west to the SR 68 / Blanco Road intersection in the east. The study area also includes portions of Reservation Road and Davis Road. A brief description of each of the roads in the study area follows:

State Route 68 (Monterey-Salinas Highway) connects State Route 1 in Monterey and US 101 in Salinas. It is a 2-lane rural highway with a speed limit of 55 mph between SR 1 and just south of the Portola Drive interchange. SR 68 is a 4-lane freeway between the Portola Drive and Spreckels Boulevard interchanges. SR 68 is a 4-lane divided highway from the Spreckels Boulevard interchange to Blanco Road in the City of Salinas. Once inside the City of Salinas, SR 68 becomes an arterial along South Main Street and John Street. It serves as a commuter route between Salinas and the Monterey Peninsula, and functions as a scenic tourist route to the Monterey Peninsula.

State Route 218 (Canyon Del Rey Road) is a two-lane highway that connects State Route 68 and State Route 1. It provides access to Del Rey Oaks, Sand City and Seaside. The SR 218 / SR 68 intersection is signal controlled.

Josselyn Canyon Road is a two-lane road that provides access to low-density residential housing units as well as a church and a convalescent hospital. The Josselyn Canyon Road / SR 68 intersection is signal controlled.

Olmsted Road is a two-lane road that provides access to the Monterey Peninsula Airport north of SR 68 and residential developments south of SR 68. The Olmsted Road / SR 68 intersection is signal controlled.

Ragsdale Drive is 4 lanes in the vicinity of the study area and provides access to the Ryan Ranch business park. The speed limit on Ragsdale Drive is 35 mph. The Ragsdale Drive / SR 68 intersection is signal controlled.

York Road provides access to some single unit housing developments as well as the Laguna Seca and Ryan Ranch Business Parks and York School located to the north of SR 68. The speed limit on York Road is 25 miles per hour. The SR 68 / York Road intersection is signal controlled.

Pasadera Drive is a private road to the north off SR 68 and provides access to the Pasadera Country Club and its associated single unit housing development. The speed limit on Pasadera Drive is 25 miles per hour. The SR 68 / Pasadera Drive intersection is signal controlled.

Boots Road provides access to a small number of residential developments to the south of SR 68 and will in the future also provide access to the proposed Wang Subdivision development. The speed limit on Boots Road is 25 miles per hour. The SR 68 / Boots Road intersection is signal controlled.

Laureles Grade Road is a two-lane north/south county road that connects SR 68 with the Carmel Valley. The speed limit on Laureles Grade Road is 45 miles per hour and it also provides access to several residential developments. The SR 68 / Laureles Grade Road intersection is signal controlled.

Corral de Tierra Road is located to the west of San Benancio Road. It is a two-lane collector street with a speed limit of 35 miles per hour. The SR 68 / Corral Del Tierra Road intersection is signal controlled.

San Benancio Road is a two-lane collector street with a speed limit of 35 miles per hour and it provides access to several residential developments. The SR 68 / San Benancio Road intersection is signal controlled.

Paseo de Vaqueros is a two-lane residential road. The Paseo de Vaqueros / San Benancio Road intersection is a T-intersection approximately 600 feet south of SR 68 with a stop sign on Paseo de Vaqueros.

Torero Drive is a two-lane road that provides access to residential neighborhoods north of SR 68. The Torero Drive / SR 68 intersection is a T-intersection with a stop sign on Torero Drive.

Portola Drive is a two-lane road that provides access to residential neighborhoods from the Portola Drive / SR 68 interchange. The SR 68 ramp intersections with Portola Drive are stop controlled.

Reservation Road is a two-lane rural road in the vicinity of the project site that connects SR 68 to the City of Marina. East of SR 68, Reservation Road becomes **River Road**, which is a 4-lane road from the SR 68 / Reservation Road interchange to Las Palmas Road. It narrows to 2 lanes just east of Las Palmas Road. River Road provides access to residential neighborhoods. The SR 68 ramp intersections with Reservation Road and River Road are signalized.

Spreckels Boulevard is a two-lane rural road that provides access to the community of Spreckels south of Salinas. The SR 68 ramp intersections with Spreckels Boulevard are controlled by stop signs.

Davis Road for the most part forms the western limit line for the City of Salinas. In the vicinity of the study area, Davis Road is a two-lane rural road with turn channelization at key intersections.

Blanco Road is a major arterial with turn channelization at key intersections. It varies between 2 and 4 lanes and is located on the south side of the City of Salinas. Blanco Road becomes South Sanborn Road north of Abbott Street.

2.2 Existing Transit Services

Monterey-Salinas Transit (MST) provides fixed-route bus service in Monterey County and Peninsula cities. Line 21 provides service between Monterey and Salinas via SR 68 with stops at various locations along SR 68. Monterey-Salinas Transit has reduced Line 21 service in recent years due to a lack of ridership on the route. In August 2003 weekday mid-day service was eliminated, and on July 30, 2005 service was further reduced to the current schedule which includes only one weekday morning round trip and a single westbound one-way trip on weekday afternoons. According to MST, most passengers traveling between Monterey and Salinas use MST's Line 20, which travels through Marina, due to the poor on-time performance of Line 21 (which is caused by traffic congestion along SR 68).

2.3 Existing Pedestrian and Bicycle Facilities

Pedestrian facilities generally include sidewalks, crosswalks and pedestrian signals. There is not a significant amount of foot-traffic in the vicinity of the proposed project and therefore sidewalks are not provided along SR 68 or in the vicinity of the proposed project. Crosswalks and pedestrian signal phasing are provided at the signalized study intersections.

There are three basic types of bicycle facilities. Each type is described below:

Bike path (Class I) - A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists.

Bike lane (Class II) - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi exclusive use of bicycles. Bike lanes allow one-way bike travel. Through travel by motor vehicles or pedestrians is prohibited, but crossing by pedestrians and motorists is permitted.

Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

There are no bicycle facilities provided in the project vicinity. Eight-foot shoulders along SR 68 are used as bike lanes.

2.4 Existing Traffic Data

The following sections present a description of the existing traffic network, existing traffic volumes, intersection levels of service, and an overview of traffic flow conditions within the study area under existing traffic conditions.

To establish existing traffic flow conditions, intersection traffic counts were collected during the weekday AM (i.e. 7:00 – 9:00 a.m.) and PM (i.e. 4:00 – 6:00 p.m.) peak hours at the 21 study intersections. The traffic counts were conducted between August 2006 and June 2008. The specific traffic count dates for each intersection are shown in Exhibits 3A and 3B. From the peak period traffic counts, the AM and PM peak hour turning movement volumes were identified. The existing AM and PM peak hour traffic volumes are presented in Exhibits 3A and 3B.

2.5 Traffic Diversions through Toro Park Estates Neighborhoods

Based on traffic counts conducted at the Portola Drive / SR 68 Westbound Ramps and Torero Drive / SR 68 intersections, it appears that a significant number of drivers on westbound SR 68 exit at Portola Drive, travel through the Toro Park Estates neighborhoods, and re-enter the westbound SR 68 traffic stream at Torero Drive. This only occurs during the weekday AM peak hour. Discussions with Monterey County Public Works staff confirmed that this occurs. Apparently drivers exit the highway and re-enter it downstream in order to get ahead in the long queue that is experienced daily on westbound SR 68 east of San Benancio Road. This results in a higher southbound right-turn volume of traffic during the AM peak hour at Torero Drive than would be expected to occur. Although the precise number of drivers that perform this diversion is not known, based on traffic counts at Torero Drive, land uses in the area and the reverse traffic flow during the PM peak hour, it is estimated to be between 200 and 300.

2.6 Existing Traffic Conditions at Toro County Park during Special Events

Representatives from the Monterey County Parks Department have indicated that there are traffic-related issues at the entrance to Toro County Park (which is in close proximity to one of the project access locations for the Ferrini Ranch Subdivision) during holidays and special events. According the Parks Department staff, Easter Sunday is by far the busiest day for the park. Based on information provided by Parks Department staff, data collection was performed at the park entrance and at the SR 68 westbound off-ramp at Portola Drive on Easter Sunday (2007) from 8:00 a.m. until 2:00 p.m. Between 8:00 a.m. and 2:00 p.m. a total of 1,960 vehicles entered the park, while 215 vehicles exited the park during the same time period. Vehicle queues began to form along Portola Drive at approximately 11:30 a.m. By 12:30 p.m., the queue had extended to the intersection of the SR 68 westbound offramp and Portola Drive. The queue continued to extend along the entire length of the SR 68 westbound offramp, and then onto SR 68 for a length of approximately 1,400 additional feet by 2:15 p.m. The queue then began to recede, and by 3:00 p.m. it was back to the entrance to the park.

Vehicles that were in the queue on SR 68 were lined up along the shoulder of the road. During this time, through traffic volumes were light and traffic operations on westbound SR 68 were acceptable although vehicles did slow down as they passed the queue.

2.7 Existing Traffic Conditions – Intersection Operations

Intersection levels of service are summarized in Exhibit 4A. The LOS calculation worksheets for existing traffic conditions are included in *Appendix B*. Mitigated level of service calculation worksheets are included in *Appendix C*. Traffic control and channelization warrant worksheets are included in *Appendix D.*

Eleven of the twenty-one existing study intersections operate below the level of service standard under existing traffic conditions. The following is a description of the operations of each intersection currently operating at deficient levels. Recommended improvements (RI) required to correct existing deficiencies are discussed in italics below the description of each intersection's operations.

Josselyn Canyon Road / SR 68 – Intersection # 1 (signalized) currently operates at LOS C during the weekday AM peak hour and LOS D during the weekday PM peak hour.

RI #1 – Modification of the signal timing to provide additional green time to the eastbound SR 68 through movement would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Olmsted Road / SR 68 – Intersection # 2 (signalized) currently operates at LOS E during the weekday AM peak hour and LOS F during the weekday PM peak hour.

RI #2 – The addition of a second eastbound SR 68 through lane and a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

York Road / SR 68 – Intersection # 5 (signalized) currently operates at LOS E during both the weekday AM and PM peak hours.

RI #3 – The addition of a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Pasadera Drive-Boots Road / SR 68 – Intersection # 6 (signalized) currently operates at LOS D during the weekday AM peak hour and LOS C during the weekday PM peak hour.

RI #4 – The addition of a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Laureles Grade Road / SR 68 – Intersection # 7 (signalized) currently operates at LOS D during the weekday AM peak hour and LOS F during the weekday PM peak hour.

RI #5 – The addition of a second eastbound SR 68 through lane and a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Corral de Tierra Road / SR 68 – Intersection # 8 (signalized) currently operates at LOS D during the weekday AM peak hour and LOS E during the weekday PM peak hour.

RI #6 – The addition of a second eastbound SR 68 through lane and a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

San Benancio Road / SR 68 – Intersection # 9 (signalized) currently operates at LOS E during the weekday AM peak hour and LOS F during the weekday PM peak hour.

RI #7 – The addition of a second eastbound SR 68 through lane and a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Torero Drive / SR 68 – Intersection # 11 (unsignalized) currently operates at LOS F during the weekday AM peak hour and LOS A during the weekday PM peak hour. The worst approach (southbound Torero Drive) operates at LOS F during the weekday AM peak hour and LOS E during the weekday PM peak hour.

RI #8 – The peak hour signal warrant is met at this intersection during the AM peak hour. The addition of a second westbound SR 68 through lane and the signalization of this intersection would improve operations to acceptable levels of service during the AM peak hour. These recommended improvements apply to the existing Torero Drive / SR 68 intersection. If the alternate project access at the realigned Torero Drive / SR 68 intersection is constructed (as discussed in Section 1.2), the existing Torero Drive would be closed off and this improvement would no longer be applicable because the intersection would no longer exist.

An option to a full signal would be a half signal similar to the Highway 156 / Castroville Boulevard intersection near Castroville, which provides a median acceleration lane for left-turn movements from the minor side street. The signal warrant would be met for this optional design by using only the westbound SR 68 volume and ignoring the eastbound SR 68 volume in the warrant analysis. Only one southbound Torero Drive left-turn occurred during the AM peak hour. This movement could be prevented by channelization modification, which would be similar to the half signal at the SR 68 / Ragsdale Drive intersection.

Note: The 2.3 mile extension of the 4-lane portion of SR 68, from the Portola Drive (Toro Park) interchange to Corral de Tierra Road (which is discussed in Section 7.2 of this report) would accomplish the four lane widening portion of this improvement.

SR 68 (South Main Street) / Blanco Road – Intersection # 19 (signalized) currently operates at LOS D during both the weekday AM and PM peak hours.

RI #9 – Widening and restriping the northbound SR 68 approach by adding a second left-turn lane to achieve two left-turn lanes, two through lanes and one right-turn lane, the westbound Blanco Road approach to three left-turn lanes, two through lanes and one right-turn lane, and the conversion of the northbound SR 68 right-turn to a free right and the southbound, eastbound and westbound right-turns to right-turn overlap phasing would improve operations to acceptable levels of service during both the AM and PM peak hours. The second northbound SR 68 left-turn lane and second westbound Blanco Road through lane are included in the City of Salinas Traffic Fee Ordinance. The third westbound Blanco Road left-turn lane and eastbound Blanco Road and southbound SR 68 receiving lanes are not.

Davis Road / Reservation Road – Intersection # 20 (unsignalized) currently operates at LOS C during the weekday AM peak hour and LOS E during the weekday PM peak hour. The worst approach (southbound Davis Road) operates at LOS F during both the weekday AM and PM peak hours.

RI #10 – The signalization of this intersection would improve operations to an acceptable level of service during the AM and PM peak hours. This improvement is currently in the design phase by the East Garrison developer.

Davis Road / Blanco Road – Intersection # 21 (signalized) currently operates at LOS C during the weekday AM peak hour and LOS D during the weekday PM peak hour.

RI #11 – Widening and restriping the northbound Davis Road approach to one left-turn lane, two through lanes and one right-turn lane, the southbound Davis Road approach to two left-turn lanes, one through lane and two right-turn lanes, and the eastbound Blanco Road approach to three left-turn lanes, two through lanes and one right-turn lane, converting the southbound and westbound right turns to right-turn overlap phasing, and widening the north leg of the intersection to include a northbound receiving lane for the third eastbound left-turn lane would improve operations at this intersection to an acceptable level of service during the AM and PM peak hours.

2.8 Existing Traffic Conditions – Road Segment Operations

The average travel speeds were determined for study segments 1 through 14 using a GPS-equipped test vehicle. Two travel runs were performed in each direction during the weekday AM and PM peak hours as well as during the off-peak period. The off-peak runs were performed to provide a comparison between the peak hours and a relatively uncongested time period. It should be noted that there was a wide range in the speeds recorded; speeds in excess of 55 mph were recorded on sections of the corridor during both the peak periods as well as during the off-peak period.

Segments 1 through 8 were analyzed using the average travel speeds, segments 9, 10, and 14 through 17 were analyzed using the HCS traffic analysis software, and segments 11 through 13 were analyzed using vehicle density. All of the methods used were based on the most applicable method described in the 2000 Highway Capacity Manual.

The results of the GPS travel runs for study segments 1 through 14 can be seen graphically in Exhibits 5A through 5C. The results are briefly discussed below:

Eastbound AM Peak Period: When considering the two AM peak period GPS runs in the eastbound direction, the longest travel time along the 15 mile study corridor was 21.1 minutes. The average travel speeds on the segments ranged from 17 to over 60 mph and the levels of service ranged from LOS A to LOS F. The most congested sections of the corridor were between Laureles Grade Road and the Portola Drive interchange. The four-lane study segments of SR 68, from approximately one-third mile west of the Portola Drive interchange to Blanco Road, did not experience congestion. Refer to Exhibit 5A for the detailed, color coded graphic depiction.

Westbound AM Peak Period: When considering the two AM peak period GPS runs in the westbound direction, the longest travel time along the 15 mile study corridor was 38.2 minutes. The average travel speeds on the segments ranged from 3 to over 60 mph and the level of service ranged from LOS C and LOS F. The most congested sections of the corridor were between York Road and San Benancio Road. The four-lane study segments of SR 68, from the Portola Drive interchange to Blanco Road did not experience congestion. The congestion on the four-lane freeway segment west of the Portola Drive interchange was caused by the long queue that began at San Benancio Road. Refer to Exhibit 5A for the detailed, color coded graphic depiction.

Eastbound PM Peak Period: When considering the two PM peak period GPS runs in the eastbound direction, the longest travel time along the 15 mile study corridor was 30.0 minutes. The average travel speeds on the segments ranged from 11 to over 60 mph and the levels of service ranged from LOS A to LOS F. The most congested sections of the corridor were between York Road and San Benancio Road. The four-lane study segments of SR 68, from approximately one-third mile west of the Portola Drive interchange to Blanco Road, did not experience congestion. Refer to Exhibit 5B for the detailed, color coded graphic depiction.

Westbound PM Peak Period: When considering the two PM peak period GPS runs in the westbound direction, the longest travel time along the 15 mile study corridor was 21.3 minutes. The average travel speeds on the segments ranged from 21 to over 60 mph and the levels of service ranged from LOS A to LOS F. The most congested sections of the corridor were between Josselyn Canyon Road and SR 218. The four-lane study segments of SR 68, from approximately one-third mile west of the Portola Drive interchange to Blanco Road, did not experience congestion. Refer to Exhibit 5B for the detailed, color coded graphic depiction.

Eastbound Off-Peak Period: When considering the two off-peak period GPS runs in the eastbound direction, the longest travel time along the 15 mile study corridor was 19.2 minutes. The average travel speeds on the segments ranged from 25 to over 60 mph and the levels of service ranged from LOS A to LOS F. Refer to Exhibit 5C for the detailed, color coded graphic depiction.

Westbound Off-Peak Period: When considering the two off-peak period GPS runs in the westbound direction, the longest travel time along the 15 mile study corridor was 19.3 minutes. The average travel speeds on the segments ranged from 20 to over 60 mph and the levels of service ranged from LOS A to LOS F. Refer to Exhibit 5C for the detailed, color coded graphic depiction.

Conclusion: It should be noted that the results discussed in the preceding paragraphs were based on the average travel speed for each segment along the 15 mile stretch of the corridor and included the stopped times at the signalized intersections. Portions of the individual segments operated at levels of service better or worse than the average, ranging from LOS A to LOS F. For a detailed tabulation of each segment's level of service, refer to Exhibit 6.

The results show that, within the study corridor, congestion is experienced on SR 68 during both and AM and PM peak hours, with the worst congestion occurring between San Benancio Road and the Portola Drive interchange (westbound) during the AM peak hour and between York Road and San Benancio Road (eastbound) during the PM peak hour. The widening of SR 68 to a 4-lane facility would improve the operating conditions along the corridor to acceptable levels of service.

Thirteen of the seventeen study road segments operate below the level of service standard under existing traffic conditions. The following page contains a description of the existing operations of each segment. Recommended road segment improvements are discussed in italics below the description of each segment's operations, and are shown on **Exhibit 7**.

SR 68

a. From Josselyn Canyon Road to San Benancio Road (Segment #1 to Segment #8). Under existing traffic conditions the levels of service range from LOS D to LOS F.

   i. *Widening SR 68 to four lanes between SR 1 and San Benancio Road would improve the operating conditions to acceptable levels of service under existing traffic conditions.*

b. From San Benancio Road to the four-lane section west of the Portola Drive interchange (Segment #9 to Segment #10). Under existing traffic conditions these road segments operate at LOS E.

   i. *Widening SR 68 to four lanes between San Benancio Road and the existing four-lane section west of the Portola Drive interchange would improve the operating conditions to acceptable levels of service under existing traffic conditions.*

c. From the four-lane section west of the Portola Drive interchange to Blanco Road (Segment #11 to Segment #14). These road segments are all four-lane segments with levels of service under existing conditions ranging from LOS A to LOS B.

   i. *No improvements are recommended under existing traffic conditions.*

SR 218

a. From SR 68 to General Jim Moore Boulevard (Segment #15). This road segment operates at LOS D during the AM and PM peak hours.

   i. *Widening this road segment to 4 lanes would improve the operating conditions to acceptable levels of service under existing traffic conditions.*

Reservation Road

a. From SR 68 to Davis Road (Segment #16). This segment operates at LOS D during the AM and PM peak hours.

   i. *Widening this road segment to 4 lanes would improve operating conditions to acceptable levels of service under existing traffic conditions.*

Davis Road

a. From Reservation Road to Blanco Road (Segment #17). This segment operates at LOS D and LOD C during the AM and PM peak hours, respectively.

   i. *Widening this road segment to 4 lanes would improve operating conditions to acceptable levels of service under existing traffic conditions.*

Existing traffic conditions road segment levels of service, as well as AM and PM peak hour traffic volumes on the study road segments, are tabulated in Exhibit 6. These are based upon the turning volumes illustrated in Exhibits 3A and 3B. The LOS calculation worksheets for existing traffic conditions are included in *Appendix B*. Mitigated level of service calculation worksheets are included in *Appendix C*.

3 BACKGROUND TRAFFIC CONDITIONS

This chapter presents a description of the traffic network, traffic volumes, and intersection levels of service within the study area under background (existing plus approved projects) traffic conditions.

3.1 Approved Projects

A number of other projects have been approved within the study area that have not yet been constructed. The list of approved projects relevant to this traffic study was developed in consultation with the County of Monterey Planning and Public Works staff. A trip generation table for the approved projects that will most likely be implemented within the next 5 years is shown in Exhibit 8. The list of approved projects includes projects in the cities of Marina, Seaside, Sand City, Monterey, Del Rey Oaks and Salinas, and unincorporated areas of Monterey County. It is anticipated that the trips generated by the approved projects will impact the study street network prior to impacts being experienced by the proposed project.

3.2 Background Traffic Conditions – Intersection Operations

The traffic that would be generated by the approved projects was combined with the existing traffic volumes to obtain volumes for background traffic conditions. Background AM and PM peak hour turning volumes are illustrated in Exhibits 9A and 9B. Traffic volumes on SR 68 will generally increase by about 13% due to trips generated by background projects. Intersection levels of service for background traffic conditions are summarized in Exhibit 4A. Intersection level of service calculation worksheets for background traffic conditions are included in *Appendix E*. Mitigated level of service calculation worksheets are included in *Appendix F*. Traffic control and channelization warrant worksheets are included in *Appendix D.*

Eleven of the twenty-one study intersections would continue to operate below their level of service standard under background traffic conditions. These are the same intersections that were discussed under existing conditions. In addition to the improvements recommended under existing conditions, the following improvements would be required to correct deficiencies caused by future traffic growth from approved projects.

<u>Josselyn Canyon Road / SR 68 – Intersection # 1 (signalized)</u> would operate at LOS D during the weekday AM peak hour and LOS E during the weekday PM peak hour.

RI #12 – The addition of a second eastbound SR 68 through lane and a second westbound SR 68 through lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Torero Drive / SR 68 – Intersection # 11 (unsignalized) would operate at LOS F during the weekday AM peak hour and LOS A during the weekday PM peak hour. The worst approach (southbound Torero Drive) would operate at LOS F during both the weekday AM and PM peak hours.

RI #13 – The addition of a second eastbound SR 68 through lane in addition to RI #8 (adding a second westbound SR 68 through lane and signalizing the intersection) would improve operations to acceptable levels of service during the AM peak hour. The peak hour signal warrant would be met at this intersection during the AM peak hour. These recommended improvements apply to the existing Torero Drive / SR 68 intersection. If the alternate project access at the realigned Torero Drive / SR 68 intersection is constructed (as discussed in Section 1.2), the existing Torero Drive would be closed off and this improvement would no longer be applicable because the intersection would no longer exist.

An option to a full signal would be a half signal similar to the Highway 156 / Castroville Boulevard intersection near Castroville, which provides a median acceleration lane for left-turn movements from the minor side street. The signal warrant would be met for this optional design by using only the westbound SR 68 volume and ignoring the eastbound SR 68 volume in the warrant analysis. Only one southbound Torero Drive left-turn occurred during the AM peak hour. This movement could be prevented by channelization modification, which would be similar to the half signal at the SR 68 / Ragsdale Drive intersection.

Note: The 2.3 mile extension of the 4-lane portion of SR 68, from the Portola Drive (Toro Park) interchange Corral de Tierra Road (which is discussed in Section 7.2 of this report) would accomplish the four lane widening portion of this improvement.

Davis Road / Reservation Road – Intersection # 20 (unsignalized) would operate at LOS F during both the weekday AM and PM peak hours. The worst approach (southbound Davis Road) would also operate at LOS F during both the weekday AM and PM peak hours.

RI #14 – Widening and restriping the eastbound Reservation Road approach to two left-turn lanes, one through lane and one shared through/right lane, widening and restriping the westbound Reservation Road approach to one left-turn lane, one through lane and one shared through/right lane, and converting the southbound Davis Road right-turn to right-turn overlap phasing in addition to RI #10 (signalizing the intersection) would improve operations to an acceptable level of service during the AM and PM peak hours.

Davis Road / Blanco Road – Intersection # 21 (signalized) would operate at LOS D during the weekday AM peak hour and LOS F during the weekday PM peak hour.

RI #15 – Widening and restriping the northbound Davis Road approach to one left-turn lane, two through lanes and two right-turn lanes, the southbound Davis Road approach to two left-turn lanes, two through lanes and two right-turn lanes, the westbound Blanco Road approach to two left-turn lanes, two through lanes and one right-turn lane, and converting the westbound Blanco Road right-turn to right-turn overlap phasing in addition to RI #11 (widening and restriping the northbound Davis Road approach to one left-turn lane, two through lanes and one right-turn lane and the eastbound Blanco Road approach to three left-turn lanes, two through lanes and one right-turn lane, converting the southbound and westbound right turns to right-turn overlap phasing, and widening the north leg of the intersection to include a northbound receiving lane for the third eastbound Blanco Road left-turn lane) would improve operations at this intersection to an acceptable level of service during the AM and PM peak hours.

3.3 Background Traffic Conditions – Road Segment Operations

With the use of the GPS and GIS-based technology, it was possible to accurately determine the operating conditions along the SR 68 corridor under existing traffic conditions. However, finding the correct methodology to determine the road segment levels of service for future conditions is more of a challenge. SR 68 is classified as a Class 1; 2-lane highway. The methodologies described in the Highway Capacity Manual to evaluate the operating conditions include two variables; travel speed and percent time spent following another vehicle. It was found that in the case of SR 68, the percent time spent following does not really play a significant role in determining the average travel speed and corresponding LOS for the road segment.

The data obtained from the GPS-equipped test vehicle under existing traffic conditions was used to calibrate the Synchro traffic analysis software in order to assess the road segment operations under the projected traffic scenarios (background, background plus project and cumulative). Exhibit 6 shows the actual speed on each study segment as recorded from the GPS device compared to the speed that was calibrated in Synchro under existing traffic conditions. Once the Synchro analysis software was calibrated for existing conditions, it was then used to estimate the projected average travel speeds for the future development scenarios. The road segment travel speeds estimated by the Synchro software are included in *Appendix G*. It should be noted that these reports were only used to estimate the travel speeds on the study segments, which were then used to determine the levels of service based on the speeds shown in Exhibit 6. Background traffic conditions road segment levels of service, as well as weekday AM and PM peak hour traffic volumes on the study road segments, are tabulated in Exhibit 6. These are based upon the turning volumes illustrated in Exhibits 9A and 9B.

Thirteen of the seventeen study segments would continue to operate below their level of service standard under background traffic conditions. These are the same segments as those discussed under existing conditions. The same improvements recommended under existing conditions are recommended under background conditions.

Background traffic conditions road segment levels of service, as well as AM and PM peak hour traffic volumes on the study road segments, are tabulated in Exhibit 6. These are based upon the turning volumes illustrated in Exhibits 9A and 9B. Level of service calculation worksheets for background traffic conditions are included in *Appendix E*. Mitigated level of service calculation worksheets are included in *Appendix F.*

4 BACKGROUND PLUS PROJECT TRAFFIC CONDITIONS

This chapter presents a description of the traffic network, traffic volumes, and intersection levels of service within the study area under Background Plus Project Traffic Conditions.

4.1 Project Trip Generation

The proposed project is described in Section 1.1. The residential and office-related trips that would be generated by the proposed project were estimated based upon trip generation rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation* handbook (7th Edition, 2003).

No standard trip generation data currently exists for wineries or wine-tasting facilities. Trip generation estimates for the winery component of the project were derived based upon trip generation data developed by Higgins Associates using studies conducted at other wineries in the Central Coast Area and the *River Road Winery Corridor Roadway Analysis* study.[1]

The proposed Ferrini Ranch Subdivision would generate an estimated 2,392 daily trips, with 215 trips (87 in, and 128 out) occurring during the weekday AM peak hour and 302 trips (165 in, and 137 out) occurring during the weekday PM peak hour. The project trip generation table is shown in Exhibit 10A.

4.2 Alternative Project Site Plan Trip Generation

The residential and office-related trips that would be generated by the alternative project site plan, as described in Section 1.2, were estimated based upon trip generation rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation* handbook (7th Edition, 2003).

No standard trip generation data currently exists for wineries or wine-tasting facilities. Trip generation estimates for the winery component of the project were derived based upon trip generation data developed by Higgins Associates using studies conducted at other wineries in the Central Coast Area and the *River Road Winery Corridor Roadway Analysis* study.

The Ferrini Ranch Subdivision alternative project site plan would generate an estimated 1,999 daily trips, with 165 trips (49 in, and 116 out) occurring during the weekday AM peak hour and 226 trips (138 in, and 88 out) occurring during the weekday PM peak hour. The alternative project site plan project trip generation table is shown in Exhibit 10B.

[1] Hexagon Transportation Consultants, Inc., May 9, 2003.

4.3 Project Trip Distribution and Assignment

Trip distribution defines the origins and destinations of all trips to and from a project site. A select zone analysis was performed for the proposed project using the Association of Monterey Bay Area Governments' (AMBAG) four-county regional traffic forecasting model. AMBAG developed this model for use in traffic forecasting within Santa Cruz, San Benito, and Monterey Counties. The model, which was created using the traffic modeling software TransCAD, includes the street networks and land uses within Santa Clara, Santa Cruz, San Benito, Monterey, and parts of San Mateo, Merced, and San Luis Obispo Counties. The project's trip distribution is based on the results from the AMBAG model select zone analysis and on actual travel patterns within the study area. The project trip distribution is shown in Exhibit 11. Exhibits 12A and 12B illustrate the weekday AM and PM peak hour project trip assignments at the study intersections, respectively. Exhibits 14A and 14B illustrate the weekday AM and PM peak hour alternative project site plan trip assignments at the study intersections, respectively.

4.4 Background Plus Project Traffic Conditions – Intersection Operations

The traffic that would be generated by the Ferrini Ranch Subdivision project was combined with the background traffic volumes to obtain volumes for background plus project traffic conditions. Background plus project weekday AM and PM peak hour traffic volumes are illustrated in Exhibits 13A and 13B, respectively. Traffic volumes on SR 68 will generally increase by about 2% over background conditions due to trips generated by the Ferrini Ranch Subdivision project. Intersection levels of service for background plus project traffic conditions are summarized in Exhibit 4A.

Intersection level of service calculation worksheets for background plus project traffic conditions are included in *Appendix H*. Mitigated level of service calculation worksheets are included in *Appendix I*. Traffic control and channelization warrant worksheets are included in *Appendix D.*

Eleven of the twenty-two study intersections would continue to operate below their level of service standard under background plus project traffic conditions. These are the same intersections discussed under existing and background conditions. The same improvements recommended under existing and background conditions are recommended under background plus project conditions.

The implementation of the proposed project would cause a small increase in delay at the study intersections (an average of 2.0 seconds in the AM peak hour and 2.5 seconds in the PM peak hour) but would not cause the levels of service at any of the study intersections to degrade to a lower unacceptable level of service. However, based on the criteria for significant project impacts discussed in Section 1.9 of this report, the project would have a significant impact on eleven of the twenty-two study intersections (it should be noted that these intersections would operate at unacceptable levels of service even without the project).

4.5 Background Plus Project Traffic Conditions – Road Segment Operations

Background plus project traffic conditions road segment levels of service, as well as weekday AM and PM peak hour traffic volumes on the study road segments, are tabulated in Exhibit 6. These are based upon the turning volumes illustrated in Exhibits 13A and 13B. Exhibit 7 tabulates the improvements recommended under background plus project traffic conditions. The road segment travel speeds estimated by the Synchro software are included in *Appendix G*.

Level of service calculation worksheets for background plus project traffic conditions are included in *Appendix H*. Mitigated level of service calculation worksheets are included in *Appendix I*.

Thirteen of the seventeen study segments would continue to operate below their level of service standard under background plus project traffic conditions. These are the same segments that were discussed under existing and background conditions. The same improvements recommended under existing and background conditions are recommended under background plus project conditions.

The implementation of the proposed project would cause the level of service on one of the study segments to degrade to a lower unacceptable level of service (i.e., SR 68 between San Benancio Road and Torero Drive would degrade from LOS E to LOS F during the PM peak hour). Based on the criteria for significant project impacts discussed in Section 1.9 of this report, the project would have a significant impact on seven of the seventeen study segments (the other six segments would operate at LOS F even without the project).

4.6 Background Plus Alternative Project Site Plan – Intersection and Road Segment Operations

The traffic that would be generated by the Ferrini Ranch Subdivision alternative project site plan was combined with the background traffic volumes to obtain volumes for background plus alternative project traffic conditions. Background plus alternative project site plan weekday AM and PM peak hour traffic volumes are illustrated in Exhibits 15A and 15B.

Intersection level of service calculation worksheets for background plus alternative project site plan traffic conditions are included in *Appendix J*. Mitigated level of service calculation worksheets are included in *Appendix K*. Traffic control and channelization warrant worksheets are included in *Appendix D*.

As shown in Exhibits 4A and 6, the study intersections and road segments would operate the same or slightly better with the alternative project site plan than the original project site plan. This is because the alternative project site plan would generate fewer trips than the original project site plan.

4.7 Background Plus Alternative Project at Alternate Project Access – Intersection Operations

The alternate project access (i.e., realigned Torero Drive / SR 68 intersection) was analyzed under background plus alternative project site plan conditions with five options for intersection geometrics and traffic controls. The five options include various combinations of signalization methods and turning movement restrictions. A summary of the five options is shown in Table 3. Schematic sketches of each option are shown in Exhibit 1D.

Intersection levels of service under background plus alternative project site plan conditions at the alternate project access (realigned Torero Drive / SR 68) intersection are summarized in Exhibit 4B. Intersection level of service calculation worksheets for background plus alternative project site plan traffic conditions at the alternate project access are included in *Appendix P*.

From Exhibit 4B it can be seen that the alternate project access (i.e., realigned Torero Drive / SR 68 intersection) would operate at acceptable LOS A, B or C with lane configuration and control options 1, 3 and 5. Although the delay at the intersection would generally be lower with options 3 and 5, option 1 would operate at LOS C or better under background plus alternative site plan and cumulative plus alternative site plan conditions, and would provide full access to the existing neighborhoods north of SR 68 and the project site south of SR 68. It is therefore recommended that if the alternate project access is constructed, the intersection be designed as a full-access, signalized intersection.

5 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

This chapter presents a description of the traffic network, traffic volumes, and intersection levels of service within the study area under 2030 Cumulative Traffic Conditions. Various approved and proposed projects throughout the Cities of Marina, Seaside, Sand City, Monterey, Del Rey Oaks, Salinas, and Monterey County are anticipated to be developed, or at least partially developed, within approximately the next twenty-five years. Cumulative traffic forecasts were derived from traffic generation estimates from the approved and proposed projects throughout the study area. In addition, traffic growth rates from daily forecasts in the AMBAG traffic forecasting model were utilized to forecast traffic growth along the SR 68 corridor. The Cumulative Plus Project Traffic Conditions scenario therefore includes existing traffic volumes, the estimated traffic that would be generated by all approved and cumulative projects in the vicinity of the study area, the proposed project, and traffic generated by regional growth.

5.1 Cumulative Projects

A number of other projects have been proposed within the study area that have not yet been approved or even formally submitted for evaluation. The list of cumulative projects relevant to this traffic study was developed in consultation with the County of Monterey Planning and Public Works staff. Exhibit 16 includes a trip generation table for the cumulative projects.

5.2 Cumulative Plus Project Traffic Conditions - Intersection Operations

The trips that would be generated by the proposed project were combined with the forecasted 2030 Cumulative traffic volumes to obtain Cumulative plus project traffic conditions weekday AM and PM peak hour turning volumes. These volumes are illustrated in Exhibits 17A and 17B. Since the alternative project site plan would generate fewer trips and would result in equivalent or slightly better levels of service on the study road network, only the trips generated by the original project site plan were analyzed under Cumulative conditions, as these represent a worst-case scenario.

Traffic volumes on SR 68 will generally increase by about 34% over background plus project conditions due to trips generated by cumulative projects. Intersection levels of service for cumulative traffic conditions are summarized in Exhibit 4A. Intersection level of service calculation worksheets for cumulative traffic conditions are included in *Appendix L*. Mitigated level of service calculation worksheets are included in *Appendix M*.

Nineteen of the twenty-two study intersections would operate below their level of service standard under cumulative plus project traffic conditions. Some of these are the same intersections and corresponding improvements that were recommended under existing, background and background plus project traffic conditions. Additional improvements required to correct future deficiencies are listed below.

Olmsted Road / SR 68 – Intersection # 2 (signalized) would operate at LOS F during the weekday AM and PM peak hours.

RI #16 – Widening and restriping the northbound Olmsted Road approach to one shared left/through lane and one right-turn lane, converting the northbound Olmsted Road right-turn to right-turn overlap phasing, and widening and restriping the southbound Olmsted Road approach to include two left-turn lanes, one through lane and one right-turn lane in addition to RI #2 (adding a second eastbound SR 68 through lane and a second westbound SR 68 through lane) would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

SR 218 / SR 68 – Intersection # 3 (signalized) would operate at LOS E during the weekday AM peak hour and LOS F during the weekday PM peak hour.

RI #17 – Widening and restriping the northbound SR 218 approach to one left-turn lane, one through lane, and one right-turn lane, widening and restriping the SR 68 eastbound approach to include two left-turn lanes, one through lane, and one shared through/right lane, and converting the southbound SR 218 right-turn to right-turn overlap phasing would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Ragsdale Drive / SR 68 – Intersection # 4 (half signal) would operate at LOS D during the weekday AM peak hour and LOS B during the weekday PM peak hour.

RI #18 – The addition of a second eastbound Ragsdale Drive left-turn lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

York Road / SR 68 – Intersection # 5 (signalized) would operate at LOS F during both the weekday AM and PM peak hours.

RI #19 – The addition of a second eastbound SR 68 through lane and a second eastbound SR 68 left-turn lane in addition to RI #3 (adding a second westbound SR 68 through lane) would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Pasadera Drive-Boots Road / SR 68 – Intersection # 6 (signalized) would operate at LOS F during the weekday AM and PM peak hours.

RI #20 – The addition of a second eastbound SR 68 through lane in addition to RI #4 (adding a second westbound SR 68 through lane) would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Laureles Grade Road / SR 68 – Intersection # 7 (signalized) would operate at LOS F during the weekday AM and PM peak hours.

RI #21 – Converting the northbound Laureles Grade Road right-turn to right-turn overlap phasing in addition to RI #5 (adding a second eastbound SR 68 through lane and a second westbound SR 68 through lane) would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Corral de Tierra Road / SR 68 – Intersection # 8 (signalized) would operate at LOS F during both the weekday AM and PM peak hours.

RI #22 – Converting the northbound Corral de Tierra Road right-turn to right-turn overlap phasing in addition to RI #6 (adding a second eastbound SR 68 through lane and a second westbound SR 68 through lane) would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

Portola Drive / SR 68 WB Ramps – Intersection # 13 (unsignalized) would operate at LOS F during the weekday AM peak hour and LOS C during the weekday PM peak hour.

RI #23 – The peak hour signal warrant would be met at this intersection during the AM peak hour. The signalization of this intersection would improve operations to an acceptable level of service during the AM and PM peak hours.

Note: If the four lane extension (which is discussed in Section 7.2 of this report) is implemented, this improvement may no longer be applicable, as the traffic diversions described in Section 2.5 of this report would no longer occur.

SR 68 EB Ramps / River Road – Intersection # 14 (signalized) would operate at LOS F during the weekday AM peak hour and LOS C during the weekday PM peak hour.

RI #24 – The addition of a second eastbound River Road left-turn lane and widening the north leg of the intersection to include a northbound SR 68 receiving lane for the second eastbound River Road left-turn lane would improve operations at this intersection to acceptable levels of service during the AM and PM peak hours.

SR 68 WB Ramps / Reservation Road – Intersection # 15 (signalized) would operate at LOS F during both the weekday AM and PM peak hours.

RI #25 – Widening and restriping the eastbound Reservation Road approach to one through lane and one right-turn lane would improve operations to an acceptable level of service during the AM and PM peak hours.

SR 68 WB Ramps / Spreckels Boulevard – Intersection # 16 (unsignalized) would operate at LOS F during the weekday AM and PM peak hours. The worst approach (westbound off-ramp) would also operate at LOS F during the weekday AM and PM peak hours.

RI #26 – The peak hour signal warrant would be met at this intersection during the weekday AM and PM peak hours. The signalization of this intersection, along with the addition of a second westbound Spreckels Boulevard left-turn lane and the widening the south leg of the intersection to include a southbound SR 68 on-ramp receiving lane for the second westbound Spreckels Boulevard left-turn lane would improve operations to acceptable levels of service during both the AM and PM peak hours.

SR 68 EB Off-ramp / Spreckels Boulevard – Intersection # 17 (unsignalized) would operate at LOS F during the weekday AM and PM peak hours. The worst approach would also operate at LOS F during the weekday AM and PM peak hours.

RI #27 – The addition of a second westbound Spreckels Boulevard through lane and widening and restriping the eastbound SR 68 off-ramp to one shared left/right lane and one right-turn lane would improve operations to acceptable levels of service during both the AM and PM peak hours. This improvement would also require the addition of a second eastbound Spreckels Boulevard receiving lane.

SR 68 EB On-ramp / Spreckels Boulevard – Intersection # 18 (unsignalized) would operate at LOS A during the weekday AM and PM peak hours. The worst approach would operate at LOS F during the weekday AM and PM peak hours.

RI #28 – The addition of a second eastbound Spreckels Boulevard through lane and a second westbound Spreckels Boulevard through lane would improve operations at this intersection. However, the southbound SR 68 on-ramp approach will remain at LOS F.

5.3 Cumulative Plus Project Traffic Conditions – Road Segment Operations

Cumulative plus project traffic conditions road segment levels of service, as well as weekday AM and PM peak hour traffic volumes on the study road segments, are tabulated in Exhibit 6. These are based upon the turning volumes illustrated in Exhibits 17A and 17B. Exhibit 7 tabulates improvements required under cumulative traffic conditions. The Synchro road segment worksheets used to estimate the projected travel speeds under cumulative traffic conditions are included in *Appendix G*.

Thirteen of the seventeen study segments would continue to operate below their level of service standard under cumulative plus project traffic conditions. These are the same segments as those discussed under existing conditions. The same improvements recommended under existing conditions are recommended under cumulative plus project conditions.

Level of service calculation worksheets for cumulative plus project traffic conditions are included in *Appendix L*. Mitigated level of service calculation worksheets are included in *Appendix M*.

5.4 Cumulative Plus Alternative Project at Alternate Project Access – Intersection Operations

The alternate project access (i.e., realigned Torero Drive / SR 68 intersection) was analyzed under cumulative plus alternative project site plan conditions with five options for intersection geometrics and traffic controls. The five options include various combinations of signalization methods and turning movement restrictions. A summary of the five options is shown in Table 3. Schematic sketches of each option are shown in Exhibit 1D.

Intersection levels of service under cumulative plus alternative project site plan conditions at the alternate project access (realigned Torero Drive / SR 68) intersection are summarized in Exhibit 4B. Intersection level of service calculation worksheets for cumulative plus alternative project site plan traffic conditions at the alternate project access are included in *Appendix P*.

From Exhibit 4B it can be seen that the alternate project access (i.e., realigned Torero Drive / SR 68 intersection) would operate at acceptable LOS A, B or C with lane configuration and control options 1, 3 and 5. Although the delay at the intersection would generally be lower with options 3 and 5, option 1 would operate at LOS C or better under cumulative plus alternative project site plan conditions, and would provide full access to the existing neighborhoods north of SR 68 and the project site south of SR 68. It is therefore recommended that if the alternate project access is constructed, the intersection be designed as a full-access, signalized intersection.

5.5 Cumulative Plus Project Traffic Conditions – Project-Related Mitigation Measures

Per CEQA guidelines, a cumulative impact is defined as follows: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects".

Both Caltrans and Monterey County consider the collection and application of fees for impacts of new development as sufficient to mitigate cumulative impacts to the State Highway System under CEQA.

MM #3 – The proposed project should pay traffic impact fees per the TAMC Regional Traffic Impact Fee program as mitigation for cumulative project impacts on the regional road network. If the project's fair-share payment (MM#1) to extend the four-lane section of SR 68 2.3 miles from the existing four-lane section to Corral de Tierra Road is less than their base TAMC fee payment, then the difference should be credited towards their

TAMC fee. If the project's fair-share payment (MM#1) exceeds their base TAMC fee then the project would not be eligible for credit towards their TAMC fee.

6 PROJECT ACCESS

As previously stated, State Route 68 would provide regional access to the project site, with direct project access provided at the State Route 68 / Portola Drive (Toro Park) interchange, the future River Terrace Drive / River Road intersection, and the San Benancio Road / Paseo de Vaqueros intersection. In addition, the realigned Torero Drive / SR 68 intersection would also provide direct access to the project if this intersection is constructed.

6.1 Project Access #1 – San Benancio Road / Paseo de Vaqueros

The project will create a fourth (east) leg at the existing San Benancio Road / Paseo de Vaqueros intersection. This will serve 12 homes with the original site plan and a single residence with the alternative site plan. The Monterey County standard left-turn channelization warrant has been assessed at this intersection. The left-turn channelization warrant would not be met for either the northbound or southbound directions under project or alternative project site plan conditions at this intersection. Warrants are included in *Appendix D*. The design of all intersection improvements should be approved by the County of Monterey.

6.2 Project Access #2 – Portola Drive / SR 68 EB Ramps

This access location would serve 192 homes (125 units to the west of the Toro Park interchange and 67 units to the east of the interchange) with the original site plan. With the alternative site plan, this access location would also serve 192 homes (149 to the west of the Toro Park interchange and 43 units to the east of the interchange), unless the alternate project access at SR 68 and the realigned Torero Drive were approved by Caltrans.

If the alternate project access were approved, the alternate access would serve the 149 units to the west of the Toro Park interchange, and the Portola Drive / SR 68 EB Ramps intersection would only serve the 43 units to the east of the Toro Park interchange. The design of all intersection improvements should be approved by the County of Monterey. If the alternate project access is not approved, the design of the Portola Drive / SR 68 EB Ramps project access will most likely be influenced by the traffic-related issues at the entrance to Toro County Park, as discussed in Section 2.6 of this report.

6.3 Project Access #3 – River Terrace Drive / River Road

The project will create a new T-intersection on River Road at the proposed River Terrace Drive, which would be the south leg of the intersection. This will serve 8 homes and the winery facilities with the original site plan and 19 homes and the winery facilities with the alternative project site plan. The Monterey County standard left-turn channelization warrant has been assessed at this intersection and the left-turn channelization warrant would not be met for the westbound River Road approach under project or alternative project site plan conditions. Although the warrant would not be met, the County may

require that it be provided for safety reasons. The right-turn warrant was also assessed at this intersection for the eastbound River Road approach. At a minimum, the warrant indicates that a right-turn taper would be required. However, the County may also require a full-width right-turn lane at this location for safety reasons. The design of all intersection improvements should be approved by the County of Monterey.

6.4 Project Access #4 – Alternate Project Access (Realigned Torero Drive / SR 68)

This intersection would only be constructed with the alternative project site plan and would serve 149 homes. Details of this intersection are discussed in Section 4.9. The design of all intersection improvements should be approved by Caltrans and the County of Monterey.

7 CONCLUDING COMMENTS AND RECOMMENDATIONS

7.1 Concluding Comments

This traffic impact analysis evaluated the anticipated impacts from the increase in traffic that would be generated by the proposed Ferrini Ranch Subdivision on the surrounding road network. Five traffic scenarios were assessed in the traffic analysis, namely, existing traffic conditions, background (existing plus approved projects) traffic conditions, background plus project traffic conditions, background plus alternative project site plan conditions, and cumulative plus project traffic conditions.

The results have been thoroughly discussed in the preceding chapters of this report and the conclusion is that a number of mitigating improvements along the SR 68 corridor would be required, beginning under existing traffic conditions, to achieve and maintain acceptable levels of service on the study road network. These improvements, which for the most part are based on existing deficiencies in the road network, would not be triggered by the proposed project. In addition, funding for the implementation of these improvements along the entire SR 68 corridor is not available.

The implementation of the proposed project would generate traffic that would be added to the road network, which is already operating at deficient levels. It is therefore recommended that the proposed Ferrini Ranch Subdivision project contribute funds to improve the operating conditions on the road network. A series of intersection improvements were identified by the SR 68 Advisory Committee. These have been assumed in this report to be fully funded and in place under Background traffic conditions and therefore are not identified as mitigations required by this project.

7.2 Widening SR 68 to Four Lanes from Toro Park to West End of Toro Park Estates

A 1.1 mile extension of the 4-lane portion of SR 68, from the Portola Drive (Toro Park) interchange to the west end of Toro Park Estates, was analyzed to estimate the net reduction in travel time it would provide along the SR 68 corridor. This improvement was identified in the 1999 *State Route 68 Corridor Study* that was prepared by TAMC. It was not included in the 2001 SR 68 Improvement Advisory Committee list of improvements. However, the TAMC *Regional Impact Fee Nexus Study Update – Draft* report, dated March 26, 2008, includes a project that would widen SR 68 to four lanes from the existing 4-lane section to Corral de Tierra Road, which is an additional 1.2 miles.

The four lane extension, either to the west end of Toro Park Estates or to Corral de Tierra, would provide several benefits to the SR 68 corridor. One benefit would be a reduction in the travel time on SR 68 in both directions. The four lane extension to the west end of Toro Park Estates would reduce the combined eastbound and westbound travel time through the SR 68 corridor by approximately 286 seconds (4.6 minutes) during the weekday AM and PM peak hours.

The traffic generated by the Ferrini Ranch Subdivision **project** would increase the combined eastbound and westbound travel time through the SR 68 corridor by approximately 178 seconds, resulting in a net reduction of approximately 108 seconds with the four lane extension and the project. The project would effectively "use up" 62% of the reduction in travel time obtained from the 1.1 mile, four lane extension (i.e., 178 ÷ 286 = 62%).

The traffic generated by the Ferrini Ranch Subdivision **alternative project site plan** would increase the combined eastbound and westbound travel time through the SR 68 corridor by approximately 139 seconds, resulting in a net reduction of approximately 147 seconds with the four lane extension and the project. The alternative project would effectively "use up" 49% of the reduction in travel time obtained from the 1.1 mile, four lane extension (i.e., 139 ÷ 286 = 49%).

The implementation of the **alternative project site plan** with the **alternate access** (i.e., realigned Torero Drive as a four-leg, signalized intersection) would increase the combined eastbound and westbound travel time through the SR 68 corridor by approximately 177 seconds, resulting in a net reduction of approximately 109 seconds with the four lane extension and the project. The alternative project would effectively "use up" 62% of the reduction in travel time obtained from the 1.1 mile, four lane extension (i.e., 177 ÷ 286 = 62%).

The calculations used to estimate the reduction in travel time with the four lane extension are shown in *Appendix N* and are based on the average travel speeds through the SR 68 corridor in Exhibits 5A and 5B. The increase in travel time caused by the project was estimated using the Synchro arterial analysis reports which are included in *Appendix O*.

Another benefit of extending the four lane section would be a reduction in the length of the queue on westbound SR 68 east of San Benancio Road during the weekday AM peak hour, which is currently up to 2.5 miles long.

Based on state-wide accident data, extending the four lane section would also improve safety on this segment of SR 68 by reducing the number of accidents per year, as the state-wide accident rates on 4-lane freeways are about half of those on 2-lane highways.

In addition, it would eliminate the observed phenomenon of drivers exiting westbound SR 68 at the Portola Drive interchange to cut through the neighborhoods in Toro Park Estates. Drivers do this to get ahead of traffic by re-entering the SR 68 traffic stream at Torero Drive. This phenomenon, which occurs daily during the weekday AM peak hour, was evident in the data collection and was confirmed through discussions with Monterey County staff.

If this improvement were to be implemented with the alternate project access on SR 68, it is recommended that the existing Torero Drive be closed off. This would result in existing traffic being diverted to the newly realigned Torero Drive / SR 68 intersection or the Portola Drive interchange. If this improvement was to be implemented without the

alternate project entrance on SR 68, a decision would have to be made regarding the existing intersection on SR 68 at Torero Drive. There would be several options; the intersection could be closed off and only used as an emergency access. In this case, existing traffic would be diverted to the Portola Drive interchange. Another option would be to convert the intersection to right-in, right-out access only. Other options could also be explored, such as allowing eastbound SR 68 left-turns onto Torero Drive, but prohibiting southbound Torero Drive left-turns onto SR 68.

7.3 Widening SR 68 to Four Lanes from Toro Park to Corral de Tierra Road

As was mentioned in Section 1.10 of this report, the Transportation Agency for Monterey County (TAMC) updated the 2004 Nexus Study for a Regional Development Impact Fee in March, 2008. The project list in the 2008 Regional Impact Fee Nexus Study Update includes a project referred to as "SR 68 Commuter Improvements," which would widen SR 68 to four lanes from the existing 4-lane section (adjacent to Toro Park) to Corral de Tierra Road.

This improvement includes the improvement discussed in Section 7.2 (4-laning a 1.1 mile portion of SR 68) in addition to 4-laning another 1.2 miles of SR 68, for a total extension of 2.3 miles. Although reductions in travel time were not evaluated for this improvement, it is logical to presume that extending the existing 4-lane section of SR 68 by 2.3 miles would reduce the travel time through the corridor by more than the 286 seconds (4.7 minutes) evaluated for the 1.1 mile extension. It would also provide additional benefits, as were discussed with the 1.1. mile extension (reduction in westbound queue during the AM peak hour, improved safety, etc.).

7.4 Significant Impacts on Intersections and Road Segments Along SR 68

Based on the significant impact criteria listed in Section 1.9 of this report, the implementation of the proposed original project or the alternative project site plan would have a significant impact on eleven of the twenty-two study intersections and seven of the seventeen study road segments. These intersections and road segments are identified (in bold type) in Exhibits 4A and 6.

By contributing their fair-share towards the improvement described in Section 7.2, the project's impacts will be reduced to less-than-significant. The four-lane widening of SR 68 along the project frontage will reduce travel time along the entire corridor to more than offset the increase caused by the project.

If the project (original site plan) is implemented without the alternate access, the project would be responsible for 62% of the cost of extending the four-lane section from the existing four-lane section to the west end of Toro Park Estates, as 62% of the reduction in travel time caused by the extension would be offset by the project.

If the alternative project site plan is implemented without the alternate project access intersection on SR 68, the project would be responsible for 49% of the cost of extending the four-lane section from the existing four-lane section to the west end of Toro Park Estates, as 49% of the reduction in travel time caused by the extension would be offset by the project.

If the alternative project site plan is implemented with the alternate access intersection, then the project would be responsible for 62% of the cost, as approximately 62% of the reduction in travel time caused by the extension would be offset by the project.

7.5 Significant Impacts on Intersections and Road Segments Along Other Corridors

Three of the eleven impacted study intersections and none of the impacted seventeen study road segments identified (in bold type) in Exhibits 4A and 6 would be along corridors other than SR 68. These locations are the SR 68/Blanco Road, Davis Road/Blanco Road, and Davis Road/Reservation Road intersections. Operations at these intersections are all below Monterey County and Caltrans level of service standards under pre-project conditions.

By contributing their fair-share towards the improvements recommended at each of the aforementioned three intersections under Background Plus Project conditions, the project's impacts will be reduced to less than significant. This fair-share would be quantified as the additional traffic added by the project out of the total traffic at the intersection under Background Plus Project conditions.

If the project (original site plan) is implemented, the project would be responsible for the following fair-share percentages of the cost of implementing the recommended improvements at the Main Street/Blanco, Davis/Reservation, and Davis/Blanco intersections:

- Main/Blanco – 2.2%
- Davis/Reservation – 2.6%
- Davis/Blanco – 0.4%

If the alternative project site plan is implemented without the alternate project access intersection on SR 68, the project would be responsible for the following fair-share percentages of the cost of implementing the recommended improvements at the Main Street/Blanco, Davis/Reservation, and Davis/Blanco intersections:

- Main/Blanco – 1.6%
- Davis/Reservation – 2.0%
- Davis/Blanco – 0.3%

Note that these percentages would not change with the alternate access intersection on SR 68.

8 RECOMMENDED IMPROVEMENTS AND MITIGATION MEASURES

The recommended improvements for each traffic scenario will be listed in the order they were identified. To minimize confusion, improvements will not be repeated under subsequent traffic scenarios if they were already identified under a preceding scenario.

8.1 Recommended Improvements for Existing Traffic Conditions

Recommended Improvement #1 – At the Josselyn Canyon Road / SR 68 intersection (#1), modify the signal timing to provide additional green time to the eastbound SR 68 through movement.

Recommended Improvement #2 – At the Olmsted Road / SR 68 intersection (#2), add a second eastbound SR 68 through lane and a second SR 68 westbound through lane.

Recommended Improvement #3 – At the York Road / SR 68 intersection (#5), add a second westbound SR 68 through lane.

Recommended Improvement #4 – At the Pasadera Drive / SR 68 intersection (#6), add a second SR 68 westbound through lane.

Recommended Improvement #5 – At the Laureles Grade Road / SR 68 intersection (#7), add a second eastbound SR 68 through lane and a second westbound SR 68 through lane.

Recommended Improvement #6 – At the Corral de Tierra Road / SR 68 intersection (#8), add a second eastbound SR 68 through lane and a second westbound SR 68 through lane.

Recommended Improvement #7 – At the San Benancio Road / SR 68 intersection (#9), add a second eastbound SR 68 through lane and a second westbound SR 68 through lane.

Recommended Improvement #8 – Provide a full or half signal at the Torero Drive / SR 68 intersection (#11) and add a second westbound SR 68 through lane, or widen SR 68 to four lanes along the Toro Park Estates subdivision. These recommended improvements apply to the existing Torero Drive / SR 68 intersection. If the alternate project access at the realigned Torero Drive / SR 68 intersection is constructed (as discussed in Section 1.2), the existing Torero Drive would be closed off and this improvement would no longer be applicable because the intersection would no longer exist.

Recommended Improvement #9 – At the SR 68 / Blanco Road intersection (#19), widen and restripe the northbound SR 68 approach and add a second left-turn lane, widen and restripe the westbound Blanco Road approach and add a third left-turn lane, convert the westbound shared through/right lane to a through lane and add a dedicated right-turn lane, widen east leg of intersection (Blanco Rd.) to include a receiving lane for free northbound SR 68 right-turns, widen south leg of intersection (SR 68) to include a third southbound

receiving lane for the third westbound left, and convert the southbound, eastbound and westbound right-turns to right-turn overlap phasing. This would improve operations to acceptable LOS C during the AM and PM peak hours.

Note: The second northbound SR 68 left-turn lane and dedicated westbound Blanco Road right-turn lane are included in the City of Salinas Traffic Fee Ordinance; however, the third westbound Blanco Road left-turn lane and east leg and south leg receiving lanes are not. This would only improve operations at this intersection to LOS D in the PM peak hour under background, background plus project, and cumulative traffic conditions.

Recommended Improvement #10 – Signalize the Davis Road / Reservation Road intersection (#20).

Recommended Improvement #11 – At the Davis Road / Blanco Road intersection (#21), widen and restripe the northbound Davis Road approach, convert the northbound shared through/right lane to a through lane and add a dedicated right-turn lane, widen and restripe the southbound Davis Road approach and add a second left-turn lane and a second right-turn lane, and widen and restripe the eastbound Blanco Road approach and add a third left-turn lane, convert the eastbound shared through/right lane to a through lane and add a dedicated right-turn lane. This would require widening the north leg of the intersection (Davis Road) to accommodate a third northbound Davis Road receiving lane.

In addition to the intersection improvements listed above, State Route 68 (Monterey-Salinas Highway) should be widened to a 4-lane facility between SR 1 and the existing four-lane section to ensure acceptable operating conditions. The recently adopted TAMC Regional Traffic Impact Fee includes a project to widen SR 68 to four lanes between Corral de Tierra Road and the existing four-lane section. Widening the segment of SR 68 between SR 1 and Corral de Tierra Road to four lanes is not currently included in any fee program.

The two-lane study segments on SR 218 (between SR 68 and General Jim Moore Boulevard), Reservation Road (between SR 68 and Davis Road), and Davis Road (between Reservation Road and Blanco Road) should also be widened to four lanes. Of these three road segments, only the widening of Davis Road to four lanes between Reservation Road and Blanco Road is included in the TAMC Regional Traffic Impact Fee. Widening the other two study segments is not currently included in any fee program.

8.2 Recommended Improvements for Background Conditions

Recommended Improvement #12 – At the Josselyn Canyon Road / SR 68 intersection (#1), add a second eastbound SR 68 through lane and a second westbound SR 68 through lane.

Recommended Improvement #13 – At the Torero Drive / SR 68 intersection (#11), add a second eastbound SR 68 through lane. These recommended improvements apply to the existing Torero Drive / SR 68 intersection. If the alternate project access at the realigned Torero Drive / SR 68 intersection is constructed (as discussed in Section 1.2), the existing Torero Drive would be closed off and this improvement would no longer be applicable because the intersection would no longer exist.

Note: The 2.3 mile extension of the 4-lane portion of SR 68, from the Portola Drive (Toro Park) interchange to the west end of Toro Park Estates (which is discussed in Section 7.3 of this report) would accomplish the four lane widening portion of this improvement.

Recommended Improvement #14 – At the Davis Road / Reservation Road intersection (#20), widen and restripe eastbound Reservation Road to two left-turn lanes, one through lane and one shared through/right-turn lane, widen and restripe westbound Reservation Road to one left-turn lane, one through lane and one shared through/right-turn lane, and convert the southbound Davis Road right-turn to right-turn overlap phasing.

Recommended Improvement #15 – At the Davis Road / Blanco Road intersection (#21), widen and restripe the southbound Davis Road approach to two left-turn lanes, two through lanes and two right-turn lanes, widen and restripe the northbound Davis Road approach to one left-turn lane, two through lanes and two right-turn lanes, widen and restripe the westbound Blanco Road approach to two left-turn lanes, two through lanes and one right-turn lane.

8.3 Mitigation Measures for Background Plus Project Conditions

The following mitigation measures are recommended to offset project impacts along the SR 68 corridor.

Mitigation Measure #1 – The project should pay their fair-share to extend the four-lane section of SR 68 2.3 miles from the existing four-lane section to Corral de Tierra Road. This improvement, which is described in Sections 7.3, will reduce project impacts to less-than-significant by reducing travel time along the entire corridor to more than offset the increase caused by the project. Details of this improvement are discussed in Sections 7.2 and 7.3.

Mitigation Measure #2 – The project should pay their fair-share to construct the following improvements at the following intersections:

- <u>SR 68 / Blanco Road intersection (#19):</u> Widen and restripe the northbound SR 68 approach and add a second left-turn lane, widen and restripe the westbound Blanco Road approach and add a third left-turn lane, convert the westbound shared through/right lane to a through lane and add a dedicated right-turn lane, widen east leg of intersection (Blanco Rd.) to include a receiving lane for free northbound SR 68 right-turns, widen south leg of intersection (SR 68) to include a third southbound

receiving lane for the third westbound left, and convert the southbound, eastbound and westbound right-turns to right-turn overlap phasing.

- Davis Road / Reservation Road intersection (#20): Widen and restripe eastbound Reservation Road to two left-turn lanes, one through lane and one shared through/right-turn lane, widen and restripe westbound Reservation Road to one left-turn lane, one through lane and one shared through/right-turn lane, and convert the southbound Davis Road right-turn to right-turn overlap phasing.

- Davis Road / Blanco Road intersection (#21) widen and restripe the southbound Davis Road approach to two left-turn lanes, two through lanes and two right-turn lanes, widen and restripe the northbound Davis Road approach to one left-turn lane, two through lanes and two right-turn lanes, widen and restripe the westbound Blanco Road approach to two left-turn lanes, two through lanes and one right-turn lane.

These improvements will reduce project impacts to less-than-significant by improving vehicle delays at these intersections to more than offset the increase caused by the project.

8.4 Recommended Improvements and Mitigation Measures for Cumulative Plus Project Conditions

Mitigation Measure #3 – The proposed project should pay traffic impact fees per the TAMC Regional Traffic Impact Fee program as mitigation for cumulative project impacts on the regional road network. If the project's fair-share payment (MM#1) to extend the four-lane section of SR 68 2.3 miles from the existing four-lane section to Corral de Tierra Road is less than their base TAMC fee payment, then the difference should be credited towards their TAMC fee. If the project's fair-share payment (MM#1) exceeds their base TAMC fee then the project would not be eligible for credit towards their TAMC fee.

Recommended Improvement #16 – At the Olmsted Road / SR 68 intersection (#2), widen and restripe the northbound Olmsted Road approach to one shared left/through lane, one through lane and one right-turn lane, install right-turn overlap phasing for the northbound Olmsted Road right-turn movement, and widen and restripe the southbound Olmsted Road approach to two left-turn lanes, one through lane and one right-turn lane.

Recommended Improvement #17 – At the SR 218 / SR 68 intersection (#3), widen and restripe the northbound Monterra Ranch approach to include one left-turn lane, one through lane, and one right-turn lane, widen and restripe the eastbound SR 68 approach to include two left-turn lanes, one through lane and one shared through/right-turn lane, and install right-turn overlap phasing for the southbound SR 218 right-turn movement.

Recommended Improvement #18 – At the Ragsdale Drive / SR 68 intersection (#4), add a second eastbound SR 68 left turn lane.

Recommended Improvement #19 – At the York Road / SR 68 intersection (#5), add a second eastbound SR 68 through lane and a second eastbound SR 68 left-turn lane.

Recommended Improvement #20 – At the Pasadera Drive / SR 68 intersection (#6), add a second eastbound SR 68 through lane.

Recommended Improvement #21 – At the Laureles Grade Road / SR 68 intersection (#7), convert the northbound Laureles Grade Road right-turn movement to right-turn overlap phasing.

Recommended Improvement #22 – At the Corral de Tierra Road / SR 68 intersection (#8), convert the northbound Corral de Tierra Road right-turn movement to right-turn overlap phasing.

Recommended Improvement #23 – Signalize the Portola Drive / SR 68 WB Ramps intersection (#13).

Note: If the four lane extension (which is discussed in Section 7.3 of this report) is implemented, this improvement may no longer be applicable, as the traffic diversions described in Section 2.5 of this report would no longer occur.

Improvement #24 – At the SR 68 EB Ramps / River Road intersection (#14), add a second eastbound River Road left turn lane and a second northbound receiving lane on the SR 68 eastbound on-ramp.

Recommended Improvement #25 – At the SR 68 WB Ramps / Reservation Road intersection (#15), widen and restripe the eastbound Reservation Road approach to one through lane and one right-turn lane.

Recommended Improvement #26 – Signalize the SR 68 WB Ramps / Spreckels Boulevard intersection (#16), and add a second westbound Spreckels Boulevard left-turn lane with a second southbound SR 68 westbound on-ramp receiving lane.

Recommended Improvement #27 – At the SR 68 EB Off-ramp / Spreckels Boulevard intersection (#17), widen and restripe the westbound Spreckels Road approach to two through lanes, restripe the northbound SR 68 off-ramp left turn lane to a shared left/right turn lane, and add a second eastbound Spreckels Boulevard receiving lane.

Recommended Improvement #28 – At the SR 68 EB On-ramp / Spreckels Boulevard intersection (#18), add a second eastbound Spreckels Boulevard through lane and a second westbound Spreckels Boulevard through lane.